BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

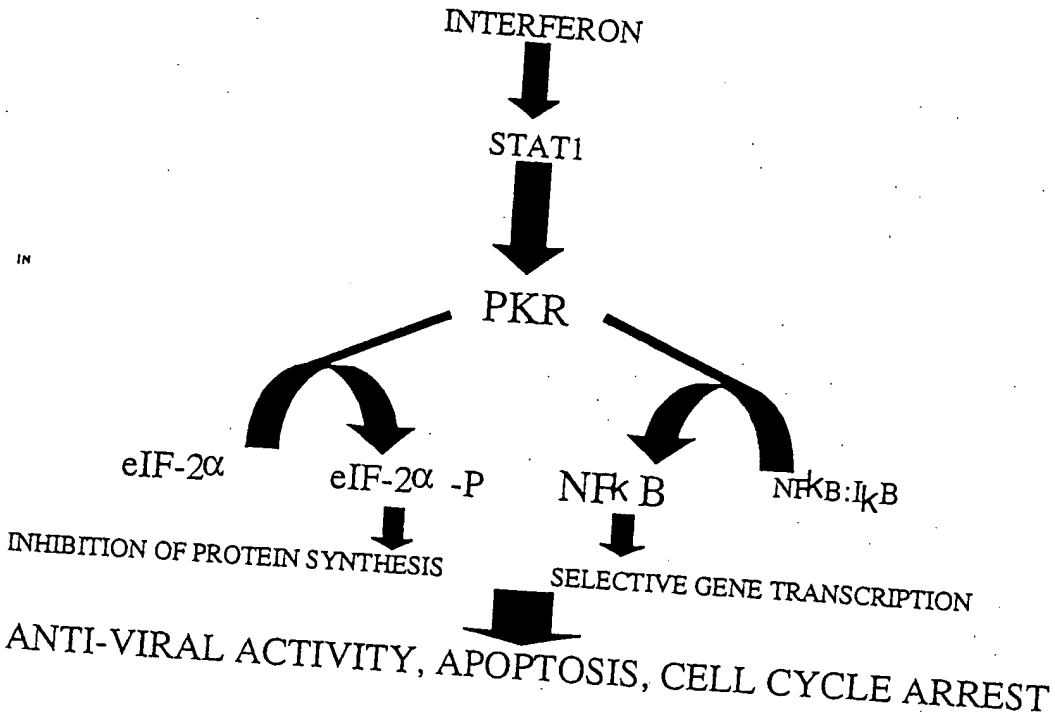

INTERFERON
STAT1
PKR
eIF-2α
eIF-2α -P
NFκ B
NFκB:IκB
INHIBITION OF PROTEIN SYNTHESIS
SELECTIVE GENE TRANSCRIPTION
ANTI-VIRAL ACTIVITY, APOPTOSIS, CELL CYCLE ARREST

FIGURE 1

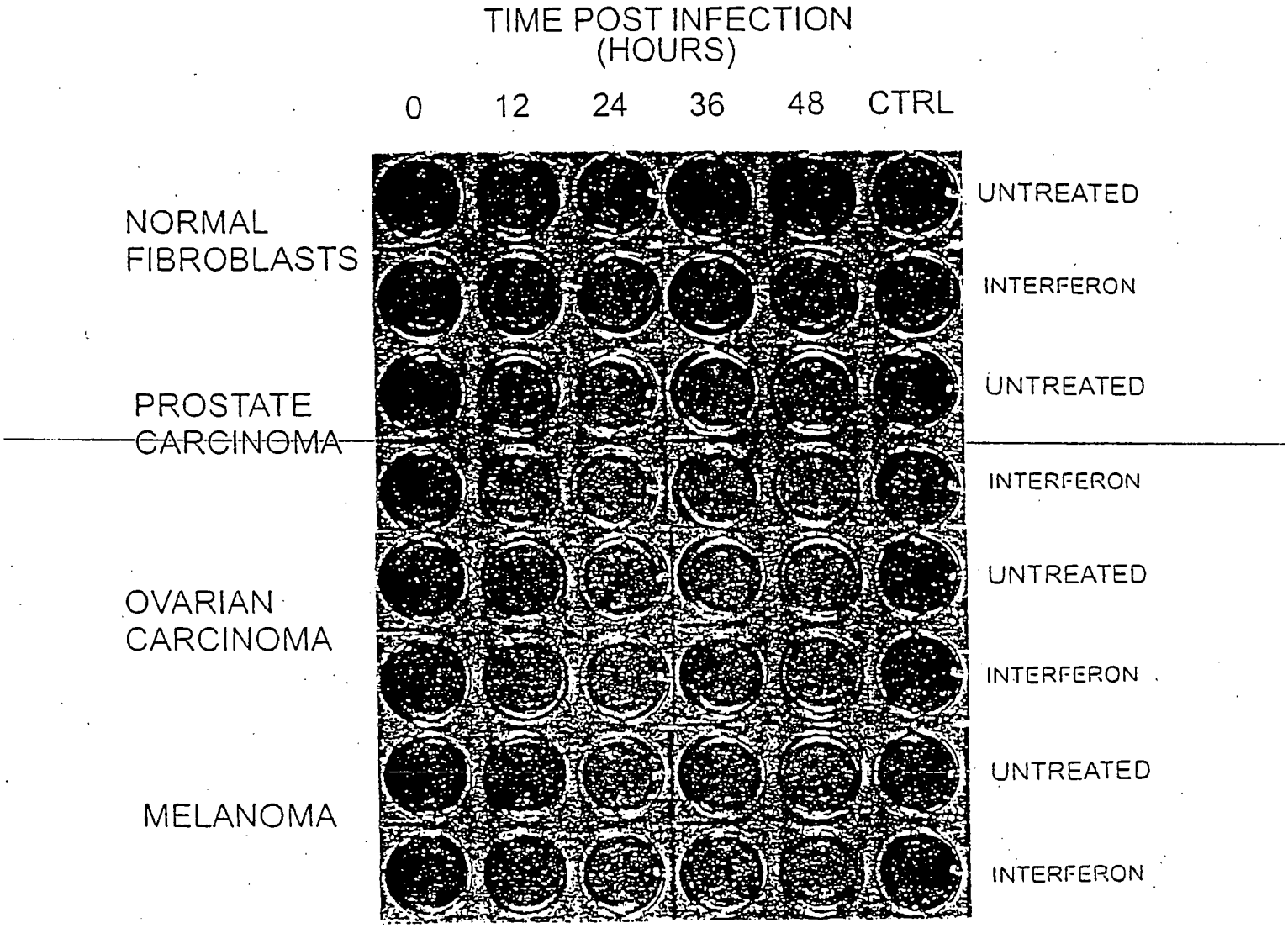
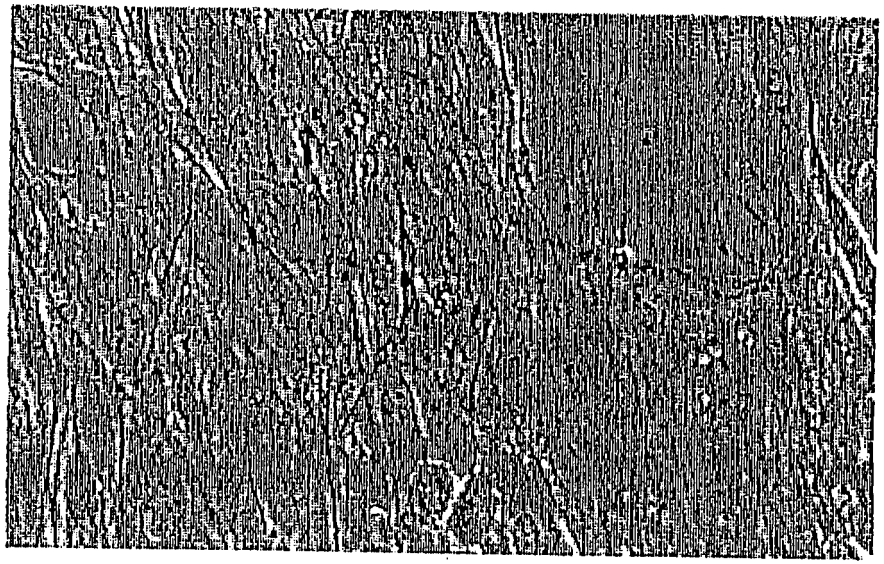

TIME POST INFECTION
(HOURS)
0
12
24
36
48
CTRL
NORMAL
FIBROBLASTS
PROSTATE
CARCINOMA
OVARIAN
CARCINOMA
MELANOMA
UNTREATED
INTERFERON
UNTREATED
INTERFERON
UNTREATED
INTERFERON
UNTREATED
INTERFERON

FIGURE 2

VSV INFECTION OF NORMAL HUMAN FIBROBLASTS

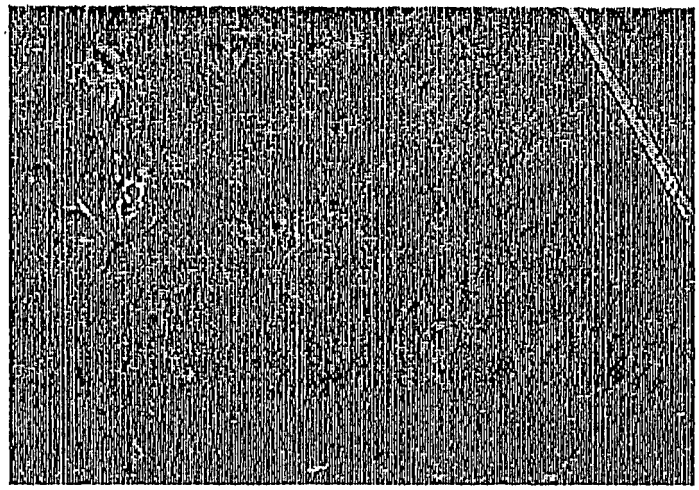
MOCK INFECTED



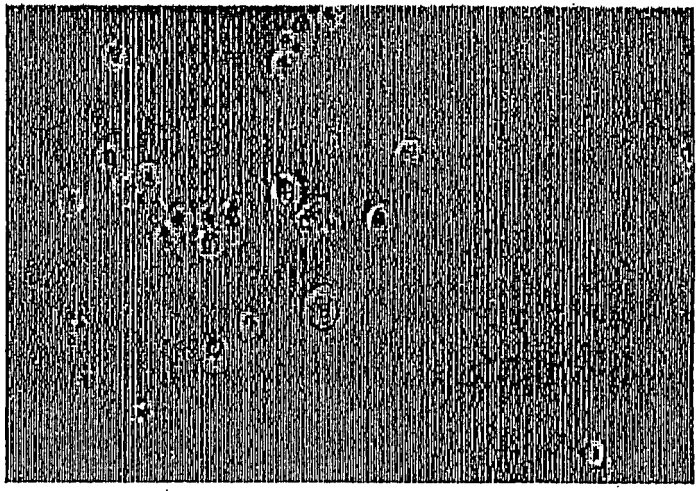
VSV MOI 1 PFU/18 HOURS

FIGURE 3A

VSV INFECTION OF OVCAR433



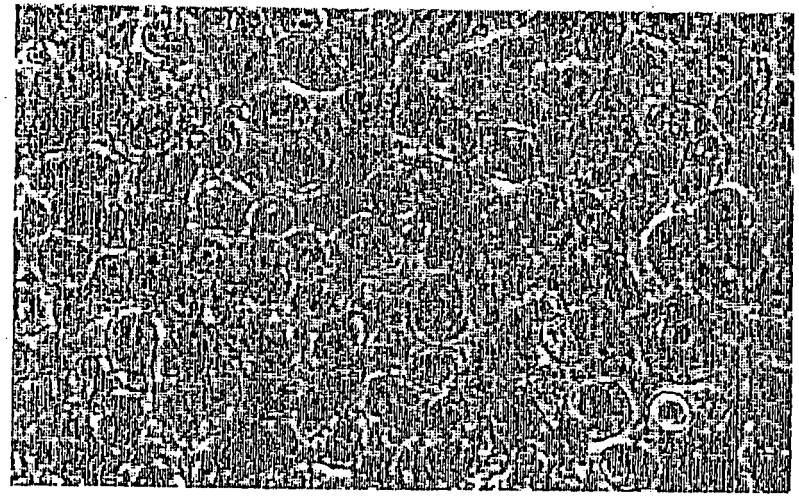
MOCK INFECTED



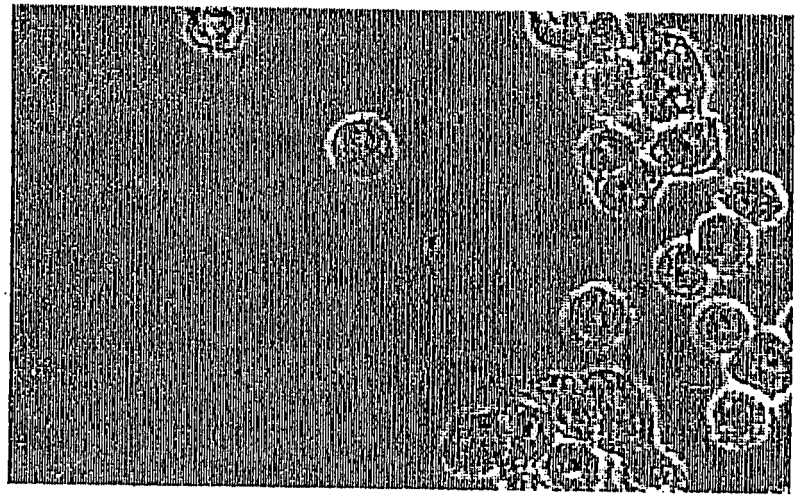
VSV 0.1PFU/18 HRS

FIGURE 3B

VSV INFECTION OF KB CELLS



MOCK INFECTED



VSV moi 1 PFU/18HRS

FIGURE 3C

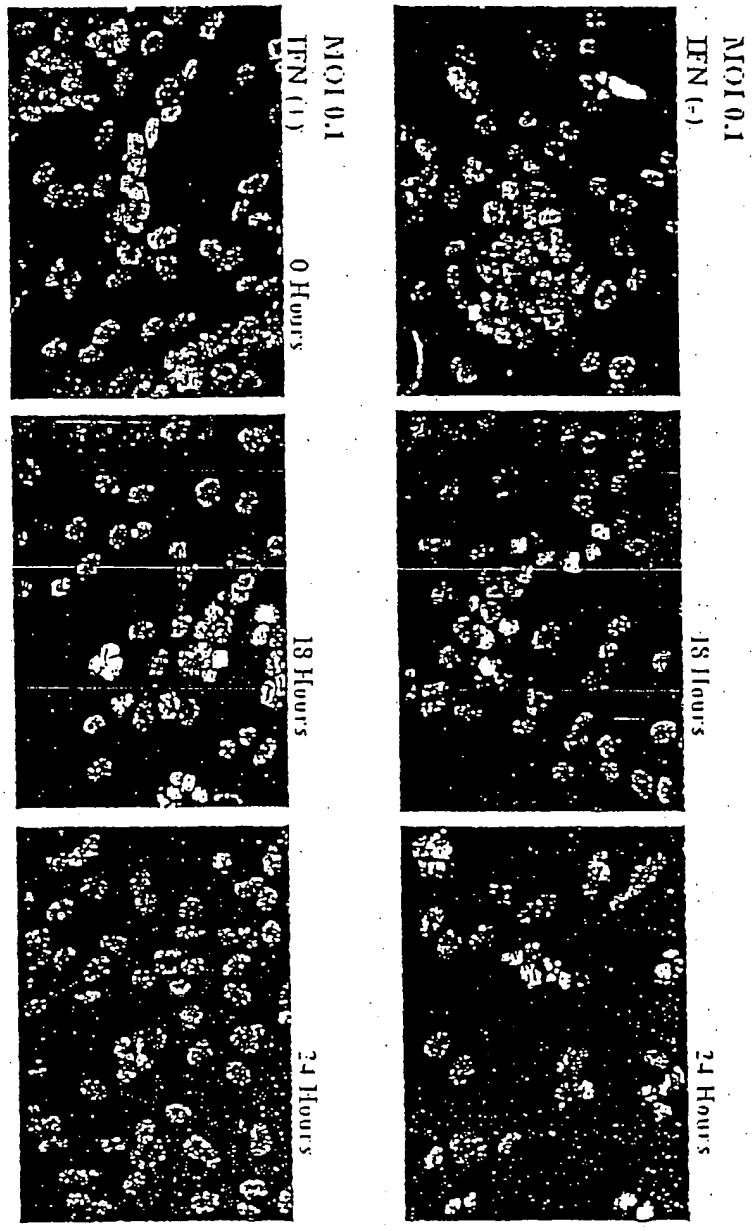

MOI 0.1
IFN (-)
MOI 0.1
IFN (+)
0 Hours
18 Hours
24 Hours
18 Hours
24 Hours

FIGURE 4/6

FIGURE 7

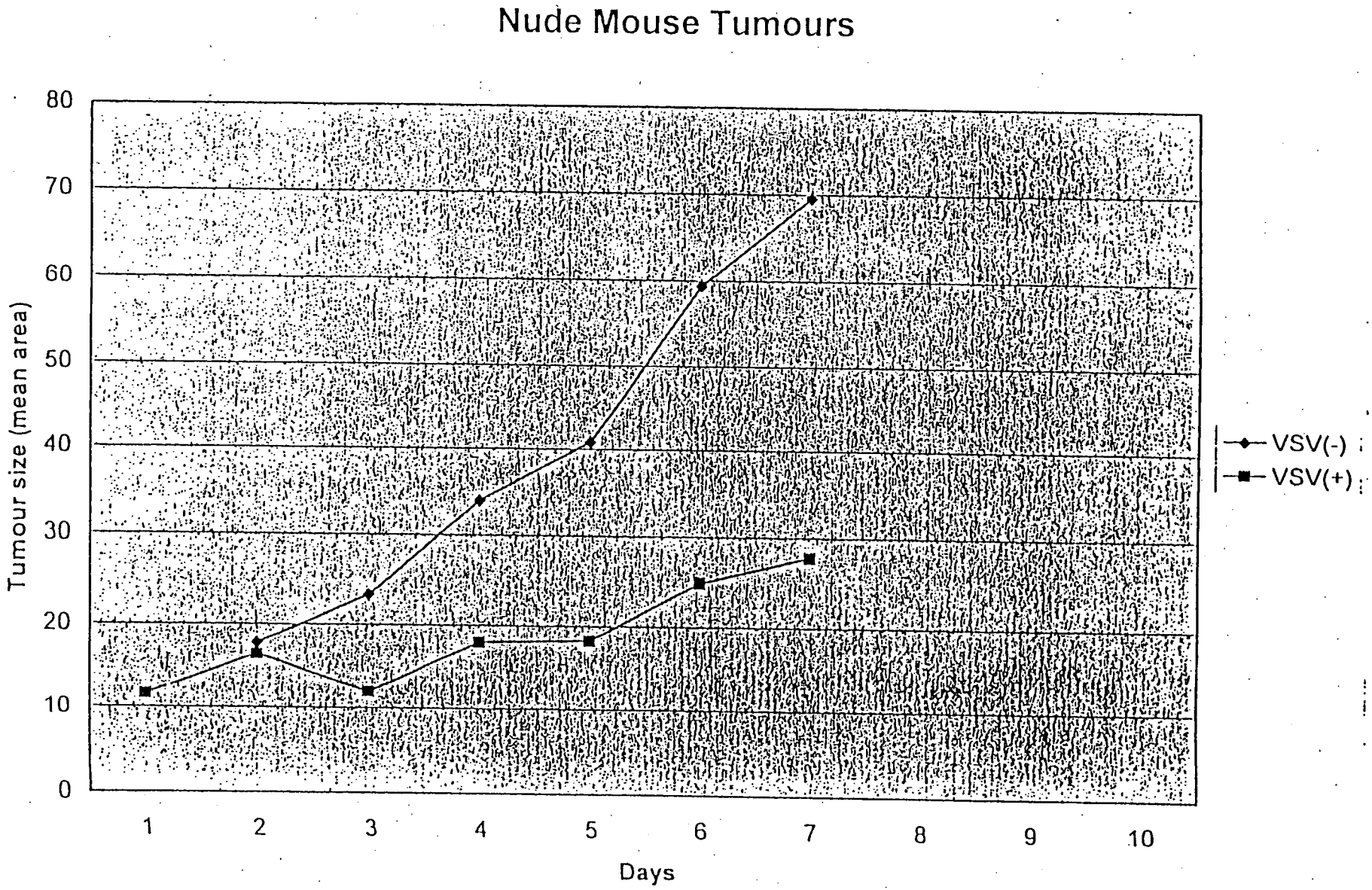

Nude Mouse Tumours
Tumour size (mean area)
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
Days
VSV(-)
VSV(+)

FIGURE 6

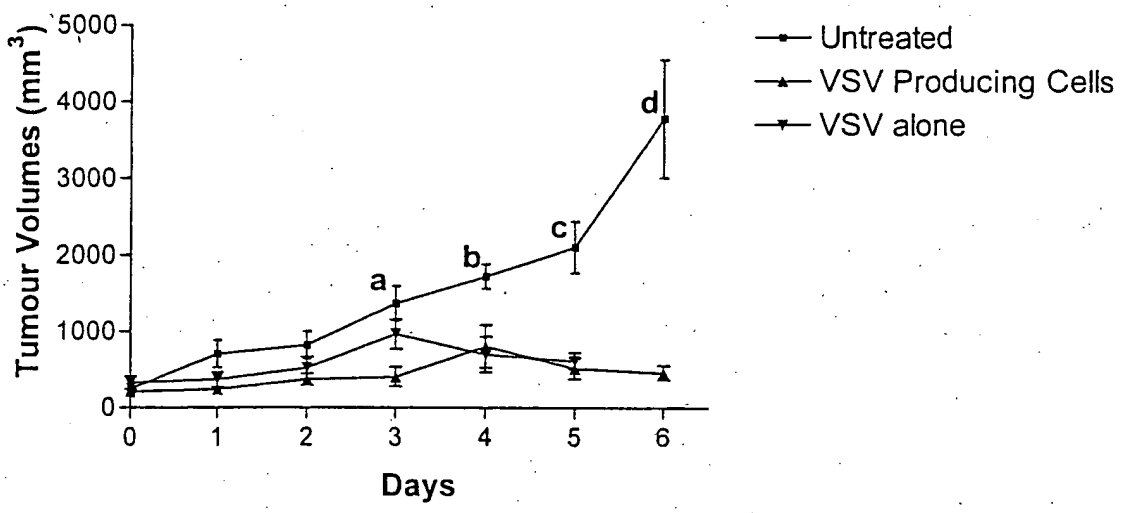
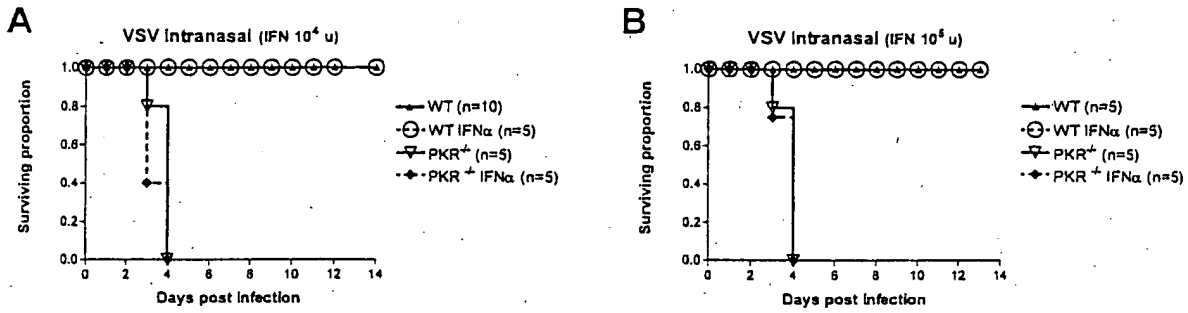

Tumour Volumes (mm3)
5000
4000
3000
2000
1000
0
0
1
2
3
4
5
6
Days
a
b
c
d
Untreated
VSV Producing Cells
VSV alone

FIGURE 7



FIGURES 8A AND 8B

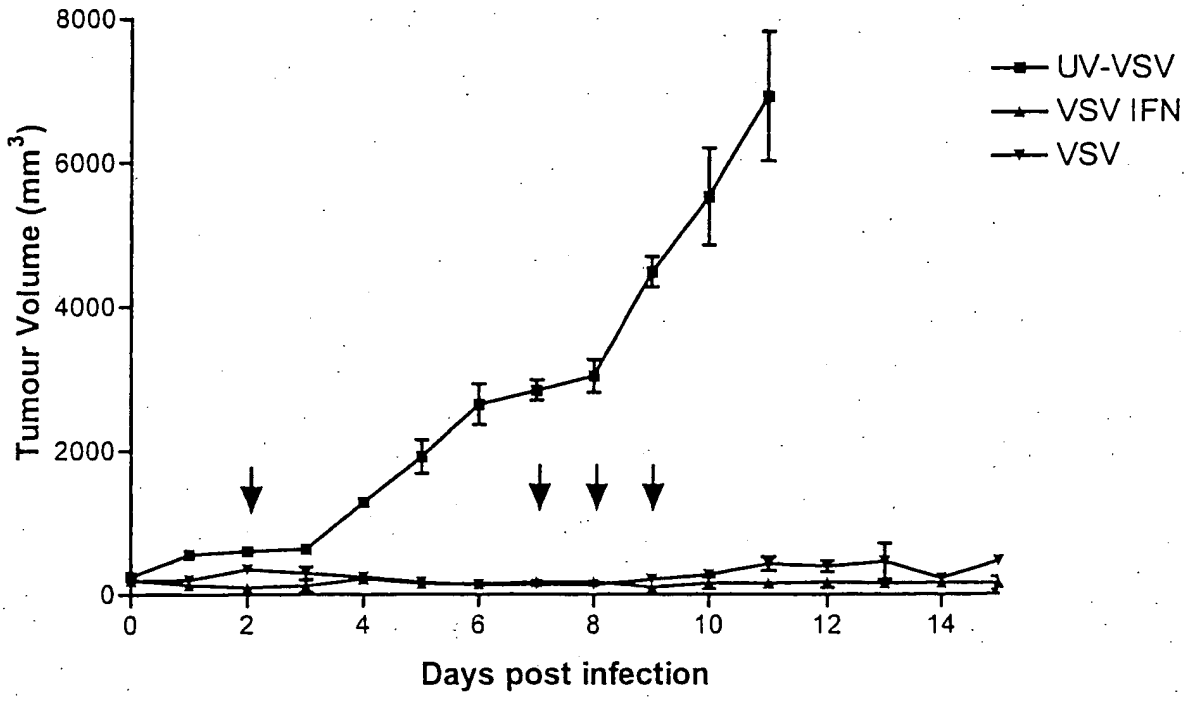

8000
6000
4000
2000
0
Tumour Volume (mm3)
0
2
4
6
8
10
12
14
Days post infection
UV-VSV
VSV IFN
VSV

FIGURE 9

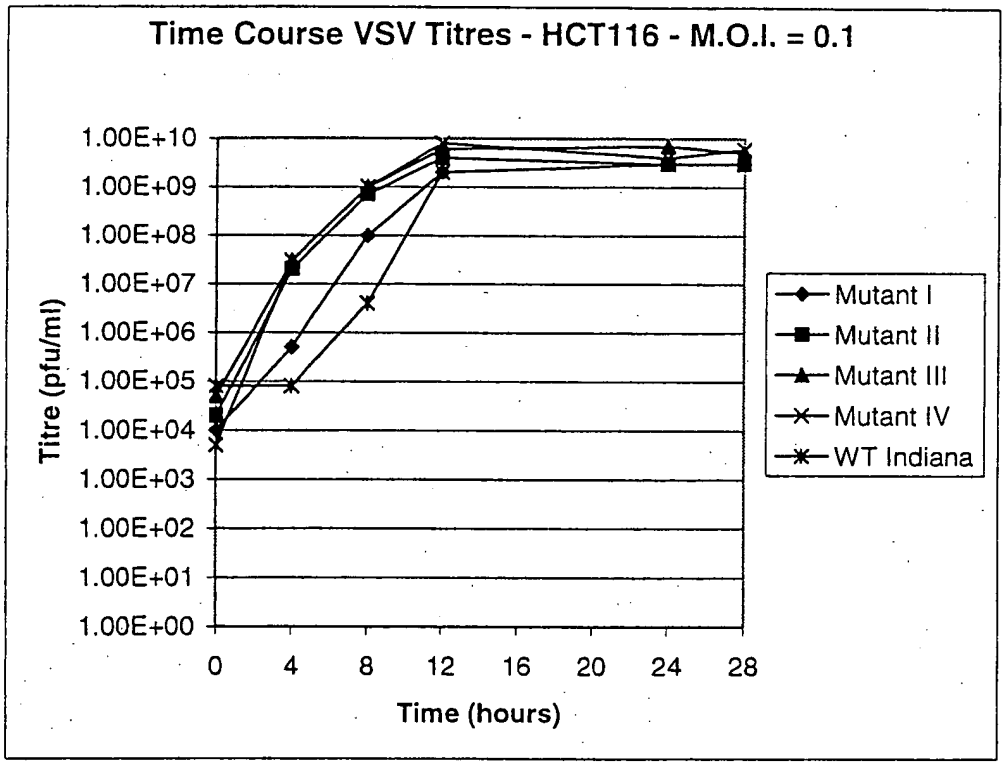

Time Course VSV Titres - HCT116 - M.O.I. = 0.1
Titre (pfu/ml)
1.00E+10
1.00E+09
1.00E+08
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
0
4
8
12
16
20
24
28
Time (hours)
Mutant I
Mutant II
Mutant III
Mutant IV
WT Indiana

FIGURE 10A

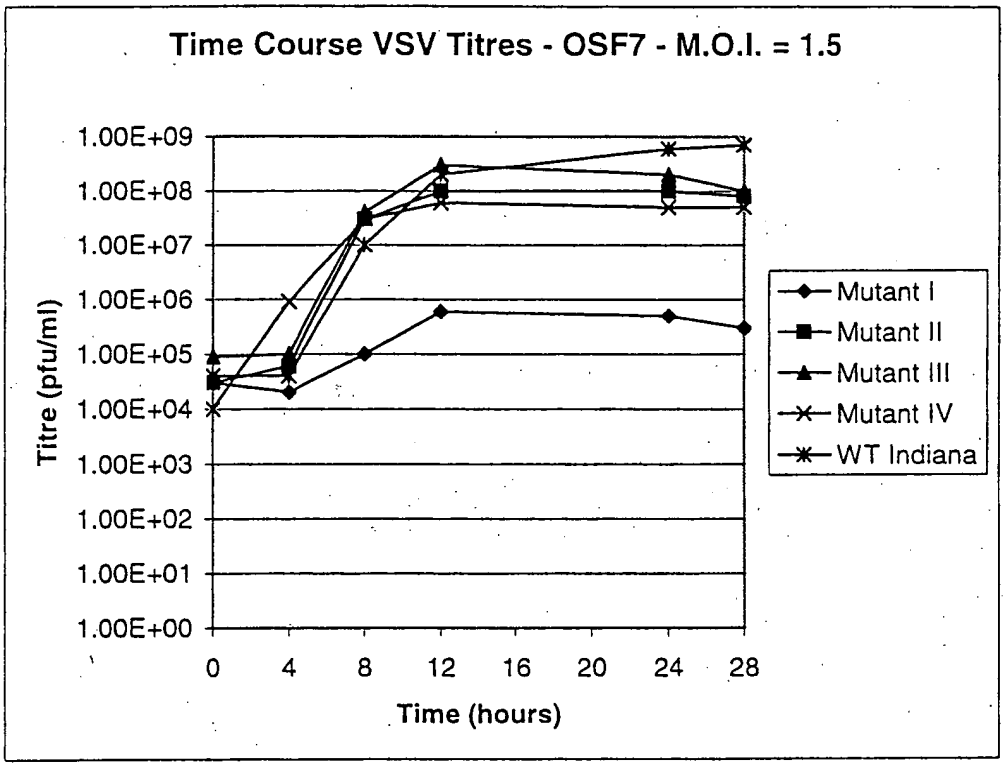

Time Course VSV Titres - OSF7 - M.O.I. = 1.5
Titre (pfu/ml)
1.00E+09
1.00E+08
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
0
4
8
12
16
20
24
28
Time (hours)
Mutant I
Mutant II
Mutant III
Mutant IV
WT Indiana

FIGURE 10B

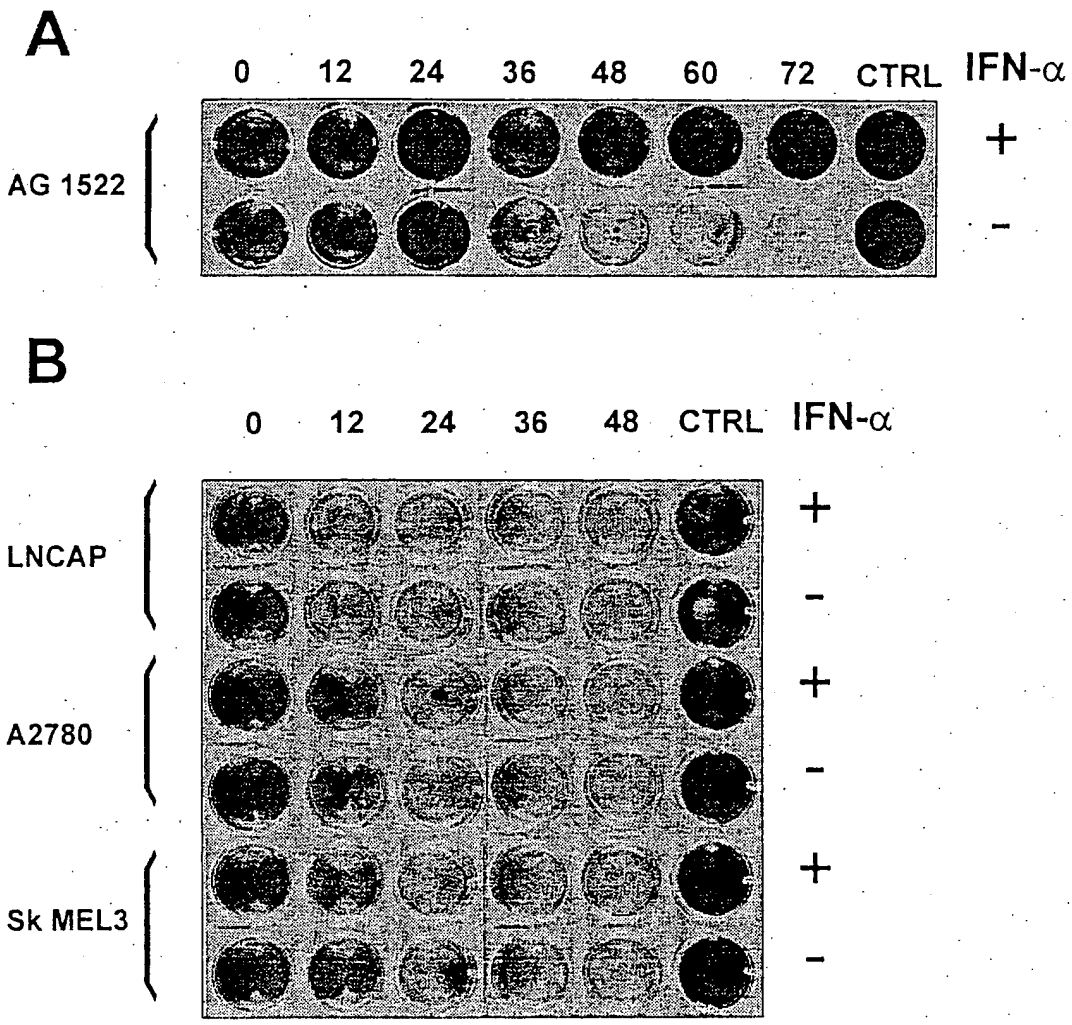

A
0
12
24
36
48
60
72
CTRL
IFN-α
AG 1522
+
-
B
0
12
24
36
48
CTRL
IFN-α
LNCAP
+
-
A2780
+
-
Sk MEL3
+
-

FIGURE 11

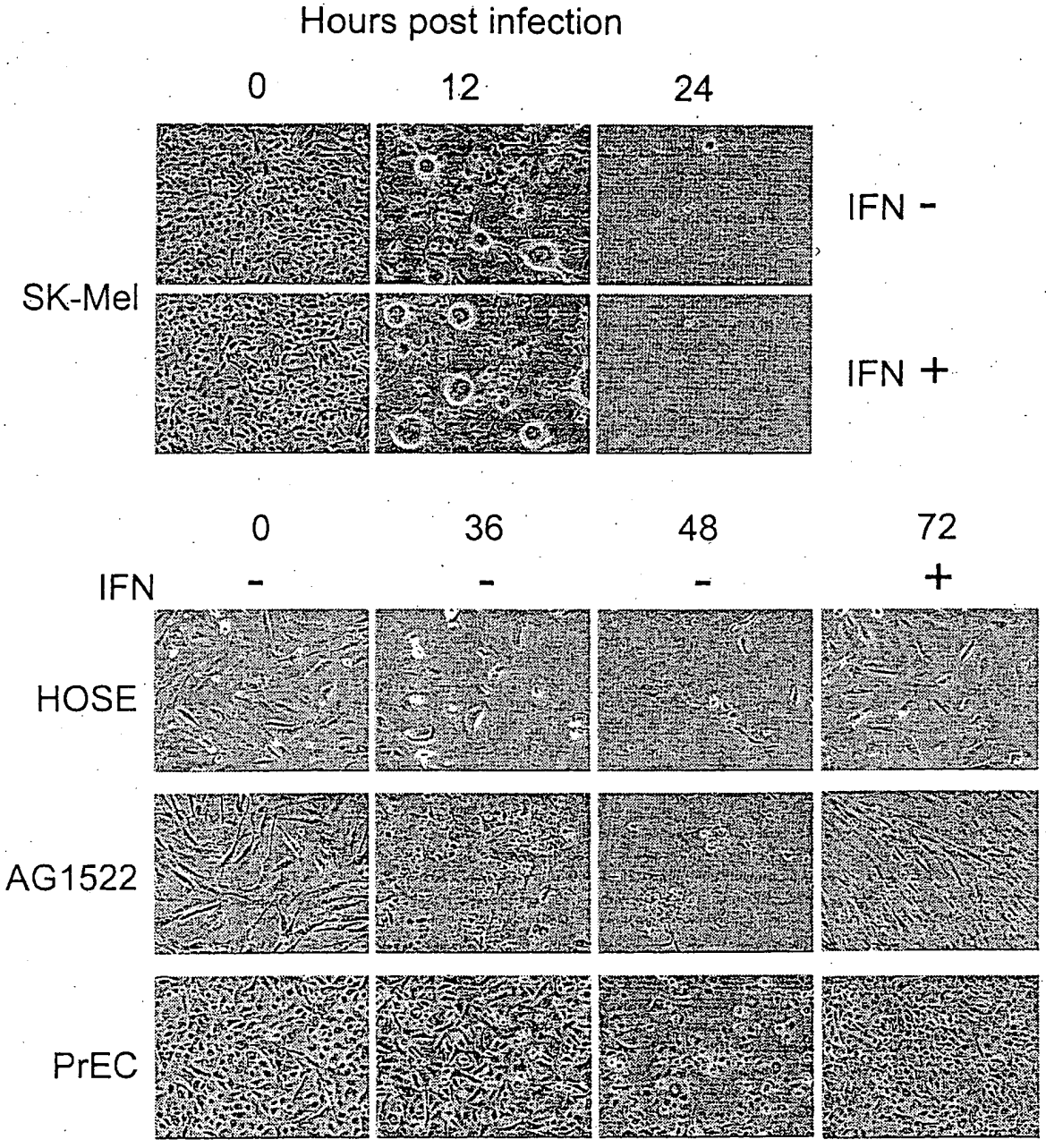

Hours post infection
0
12
24
SK-Mel
IFN -
IFN +
0
36
48
72
IFN
-
-
-
+
HOSE
AG1522
PrEC

FIGURE 12

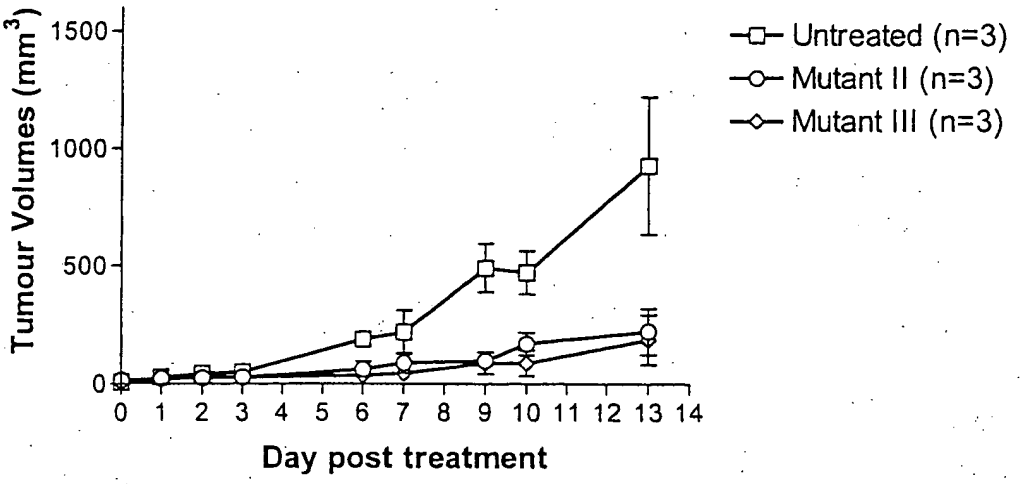

Tumour Volumes (mm3)
1500
1000
500
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day post treatment
Untreated (n=3)
Mutant II (n=3)
Mutant III (n=3)

FIGURE 13

```
                    1                                                   60
GenBank N nucl.     ATGTCTGTTACAGTCAAGAGAATCATTGACAACACAGTCATAGTTCCAAAACTTCCTGCA
     HR N nucl.     ATGTCTGTTACAGTCAAGAGAATCATTGCCAACACAGTCATAGTTCCAAAACTTCCTGCA
     M2 N nucl.     ATGTCTGTTACAGTCAAGAGAATCATTGACAACACAGTCATAGTTCCAAAACTTCCTGCA
     M3 N nucl.     ATGTCTGTTACAGTCAAGAGAATCATTGACAACACAGTCATAGTTCCAAAACTTCCTGCA
     M4 N nucl.     ............................................................

                    61                                                  120
GenBank N nucl.     AATGAGGATCCAGTGGAATACCCGGCAGATTACTTCAGAAAATCAAAGGAGATTCCTCTT
     HR N nucl.     AATGAGGATCCAGTGGAATACCCGGCAGATTACTTCAGAAAATCAAAGGAGATTCCTCTT
     M2 N nucl.     AATGAGGATCCAGTGGAATACCCGGCAGATTACTTCAGAAAATCAAAGGAGATTCCTCTT
     M3 N nucl.     AATGAGGATCCAGTGGAATACCCGGCAGATTACTTCAGAAAATCAAAGGAGATTCCTCTT
     M4 N nucl.     ............................................................

                    121                                                 180
GenBank N nucl.     TACATCAATACTACAAAAAGTTTGTCAGATCTAAGAGGATATGTCTACCAAGGCCTCAAA
     HR N nucl.     TACATCAATACTACAAAAAGTTTGTCAGATCTAAGAGGATATGTCTACCAAGGCCTCAAA
     M2 N nucl.     TACATCAATACTACAAAAAGTTTGTCAGATCTAAGAGGATATGTCTACCAAGGCCTCAAA
     M3 N nucl.     TACATCAATACTACAAAAAGTTTGTCAGATCTAAGAGGATATGTCTACCAAGGCCTCAAA
     M4 N nucl.     ............................................................

                    181                                                 240
GenBank N nucl.     TCCGGAAATGTATCAATCATACATGTCAACAGCTACTTGTATGGAGCATTAAAGGACATC
     HR N nucl.     TCCGGAAATGTATCAATCATACATGTCAACAGCTACTTGTATGGAGCATTGAAGGACATC
     M2 N nucl.     TCCGGAAATGTATCAATCATACATGTCAACAGCTACTTGTATGGAGCATTGAAGGACATC
     M3 N nucl.     TCCGGAAATGTATCAATCATACATGTCAACAGCTACTTGTATGGAGCATTGAAGGACATC
     M4 N nucl.     ............TCAATCATACATGTCAACAGCTACTTGTATGGAGCATTGAAGGACATC

                    241                                                 300
GenBank N nucl.     CGGGGTAAGTTGGATAAAGATTGGTCAAGTTTCGGAATAAACATCGGGAAAGCAGGGGAT
     HR N nucl.     CGGGGTAAGTTGGATAAAGATTGGTCAAGTTTCGGAATAAACATCGGGAAGGCAGGGGAT
     M2 N nucl.     CGGGGTAAGTTGGATAAAGATTGGTCAAGTTTCGGAATAAACATCGGGAAGGCAGGGGAT
     M3 N nucl.     CGGGGTAAGTTGGATAAAGATTGGTCAAGTTTCGGAATAAACATCGGGAAGGCAGGGGAT
     M4 N nucl.     CGGGGTAAGTTGGATAAAGATTGGTCAAGTTTCGGAATAAACATCGGGAAGGCAGGGGAT

                    301                                                 360
GenBank N nucl.     ACAATCGGAATATTTGACCTTGTATCCTTGAAAGCCCTGGACGGCGTACTTCCAGATGGA
     HR N nucl.     ACAATCGGAATATTTGACCTTGTATCCTTGAAAGCCCTGGACGGTGTACTTCCAGATGGA
     M2 N nucl.     ACAATCGGAATATTTGACCTTGTATCCTTGAAAGCCCTGGACGGTGTACTTCCAGATGGA
     M3 N nucl.     ACAATCGGAATATTTGACCTTGTATCCTTGAAAGCCCTGGACGGTGTACTTCCAGATGGA
     M4 N nucl.     ACAATCGGAATATTTGACCTTGTATCCTTGAAAGCCCTGGACGGTGTACTTCCAGATGGA

                    361                                                 420
GenBank N nucl.     GTATCGGATGCTTCCAGAACCAGCGCAGATGACAAATGGTTGCCTTTGTATCTACTTGGC
     HR N nucl.     GTATCGGATGCTTCCAGAACCAGCGCAGATGACAAATGGTTGCCTTTGTATCTACTTGGC
     M2 N nucl.     GTATCGGATGCTTCCAGAACCAGCGCAGATGACAAATGGTTGCCTTTGTATCTACTTGGC
     M3 N nucl.     GTATCGGATGCTTCCAGAACCAGCGCAGATGACAAATGGTTGCCTTTGTATCTACTTGGC
     M4 N nucl.     GTATCGGATGCTTCCAGAACCAGCGCAGATGACAAATGGTTGCCTTTGTATCTACTTGGC

                    421                                                 480
GenBank N nucl.     TTATACAGAGTGGGCAGAACACAAATGCCTGAATACAGAAAAAAGCTCATGGATGGGCTG
     HR N nucl.     TTATACAGAGTGGGCAGAACACAAATGCCTGAATACAGAAAAAGGCTCATGGATGGGCTG
     M2 N nucl.     TTATACAGAGTGGGCAGAACACAAATGCCTGAATACAGAAAAAGGCTCATGGATGGGCTG
     M3 N nucl.     TTATACAGAGTGGGCAGAACACAAATGCCTGAATACAGAAAAAGGCTCATGGATGGGCTG
     M4 N nucl.     TTATACAGAGTGGGCAGAACACAAATGCCTGAATACAGAAAAAGGCTCATGGATGGGCTG
```

FIGURE 14-1

```
                    481                                                 540
GenBank N nucl.  ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
     HR N nucl.  ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
     M2 N nucl.  ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
     M3 N nucl.  ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
     M4 N nucl.  ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC

                    541                                                 600
GenBank N nucl.  ATTTTTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
     HR N nucl.  ATTTTTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
     M2 N nucl.  ATTTTTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
     M3 N nucl.  ATTTTTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
     M4 N nucl.  ATTTTTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG

                    601                                                 660
GenBank N nucl.  TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACTATTGTTTCC
     HR N nucl.  TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACTATTGTTTCC
     M2 N nucl.  TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACTATTGTTTCC
     M3 N nucl.  TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACTATTGTTTCC
     M4 N nucl.  TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACTATTGTTTCC

                    661                                                 720
GenBank N nucl.  AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
     HR N nucl.  AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
     M2 N nucl.  AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
     M3 N nucl.  AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
     M4 N nucl.  AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG

                    721                                                 780
GenBank N nucl.  TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAAATGGTCCAA
     HR N nucl.  TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
     M2 N nucl.  TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
     M3 N nucl.  TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
     M4 N nucl.  TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA

                    781                                                 840
GenBank N nucl.  ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTCATACATGCCTTATTTGATCGAC
     HR N nucl.  ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTCATACATGCCTTATTTGATCGAC
     M2 N nucl.  ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTCATACATGCCTTATTTGATCGAC
     M3 N nucl.  ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTCATACATGCCTTATTTGATCGAC
     M4 N nucl.  ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTCATACATGCCTTATTTGATCGAC

                    841                                                 900
GenBank N nucl.  TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCCTGCCTTCCACTTCTGG
     HR N nucl.  TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCCTGCCTTCCACTTCTGG
     M2 N nucl.  TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCCTGCCTTCCACTTCTGG
     M3 N nucl.  TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCCTGCCTTCCACTTCTGG
     M4 N nucl.  TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCCTGCCTTCCACTTCTGG
```

FIGURE 14-2

```
                    901                                                 960
GenBank N nucl.  GGGCAATTGACAGCTCTTCTGCTCAGATCCACCAGAGCAAGGAATGCCCGACAGCCTGAT
     HR N nucl.  GGGCAATTGACAGCTCTTCTGCTCAGATCCACCAGAGCAAGGAATGCCCGACAGCCTGAT
     M2 N nucl.  GGGCAATTGACAGCTCTTCTGCTCAGATCTACCAGAGCAAGGAATGCCCGACAGCCTGAT
     M3 N nucl.  GGGCAATTGACAGCTCTTCTGCTCAGATCCACCAGAGCAAGGAATGCCCGACAGCCTGAT
     M4 N nucl.  GGGCAATTGAC.....................................................T

                    961                                                 1020
GenBank N nucl.  GACATTGAGTATACATCTCTTACTACAGCAGGTTTGTTGTACGCTTATGCAGTAGGATCC
     HR N nucl.  GACATTGAGTATACATCTCTTACTACAGCAGGTTTGTTGTACGCTTATGCAGTAGGATCC
     M2 N nucl.  GACATTGAGTATACATCTCTTACTACAGCAGGTTTGTTGTACGCTTATGCAGTAGGATCC
     M3 N nucl.  GACATTGAGTATACATCTCTTACTACAGCAGGTTTGTTGTACGCTTATGCAGTAGGATCC
     M4 N nucl.  GACATTGAGTATACATCTCNTACTACAGCAGGTTTGTTGTACGCTTATGCAGTAGGATCC

                    1021                                                1080
GenBank N nucl.  TCTGCGGACTTGGCACAACAGTTTTGTGTTGGAGATAACAAATACACTCCAGATGATAGT
     HR N nucl.  TCTGCTGACTTGGCACAACAGTTTTGTGTTGGAGATAGCAAATACACTCCAGATGATAGT
     M2 N nucl.  TCTGCTGACTTGGCACAACAGTTTTGTGTTGGAGATAGCAAATACACTCCAGATGATAGT
     M3 N nucl.  TCTGCTGACTTGGCACAACAGTTTTGTGTTGGAGATAGCAAATACACTCCAGATGATAGT
     M4 N nucl.  TCTGCTGACTTGGCACANCAGTTTTGTGTTGGAGATAGCAAATACACTCCAGATGATAGT

                    1081                                                1140
GenBank N nucl.  ACCGGAGGATTGACGACTAATGCACCGCCACAAGGCAGAGATGTGGTCGAATGGCTCGGA
     HR N nucl.  ACCGGAGGATTGACGACTAATGCACCGCCACAAGGCAGAGATGTGGTCGAATGGCTCGGA
     M2 N nucl.  ACCGGAGGATTGACGACTAATGCACCGCCACAAGGCAGAGATGTGGTCGAATGGCTCGGA
     M3 N nucl.  ACCGGAGGATTGACGACTAATGCACCGCCACAAGGCAGAGATGTGGTCGAATGGCTCGGA
     M4 N nucl.  ACCGGAGGATTGACGACTAATGCACCGCCACAAGGCAGAGATGTGGTCGAATGGCTCGGA

                    1141                                                1200
GenBank N nucl.  TGGTTTGAAGATCAAAACAGAAAACCGACTCCTGATATGATGCAGTATGCGAAAAGAGCA
     HR N nucl.  TGGTTTGAAGATCAAAACAGAAAACCGACTCCTGATATGATGCAGTATGCGAAACGAGCA
     M2 N nucl.  TGGTTTGAAGATCAAAACAGAAAACCGACTCCTGATATGATGCAGTATGCGAAACGAGCA
     M3 N nucl.  TGGTTTGAAGATCAAAACAGAAAACCGACTCCTGATATGATGCAGTATGCGAAACGAGCA
     M4 N nucl.  TGGTTTGAAGATCAAAACAGAAAACCGACTCCTGATATGATGCAGTATGCGAAACGAGCA

                    1201                                                1260
GenBank N nucl.  GTCATGTCACTGCAAGGCCTAAGAGAGAAGACAATTGGCAAGTATGCTAAGTCAGAATTT
     HR N nucl.  GTCATGTCACTGCAAGGCCTAAGAGAGAAGACAATTGGCAAGTATGCTAAGTCAGAATTT
     M2 N nucl.  GTCATGTCACTGCAAGGCCTAAGAGAGAAGACAATTGGCAAGTATGCTAAGTCAGAATTT
     M3 N nucl.  GTCATGTCACTGCAAGGCCTAAGAGAGAAGACAATTGGCAAGTATGCTAAGTCAGAATTT
     M4 N nucl.  GTCATGTCACTGCAAGGCCTAAGAGAGAAGACAATTGGCAAGTATGCTAAGTCAGAATTT

                    1261   1269
GenBank N nucl.  GACAAATGA
     HR N nucl.  GACAAATGA
     M2 N nucl.  GACAAATGA
     M3 N nucl.  GACAAATGA
     M4 N nucl.  GACAAATGA
```

FIGURE 14-3

```
                    1                                                   60
GenBank N a.a.      MSVTVKRIIDNTVIVPKLPANEDPVEYPADYFRKSKEIPLYINTTKSLSDLRGYVYQGLK
     HR N a.a.      MSVTVKRIIANTVIVPKLPANEDPVEYPADYFRKSKEIPLYINTTKSLSDLRGYVYQGLK
     M3 N a.a.      MSVTVKRIIDNTVIVPKLPANEDPVEYPADYFRKSKEIPLYINTTKSLSDLRGYVYQGLK
     M4 N a.a.      ............................................................

                    61                                                  120
GenBank N a.a.      SGNVSIIHVNSYLYGALKDIRGKLDKDWSSFGINIGKAGDTIGIFDLVSLKALDGVLPDG
     HR N a.a.      SGNVSIIHVNSYLYGALKDIRGKLDKDWSSFGINIGKAGDTIGIFDLVSLKALDGVLPDG
     M3 N a.a.      SGNVSIIHVNSYLYGALKDIRGKLDKDWSSFGINIGKAGDTIGIFDLVSLKALDGVLPDG
     M4 N a.a.      ....SIIHVNSYLYGALKDIRGKLDKDWSSFGINIGKAGDTIGIFDLVSLKALDGVLPDG

                    121                                                 180
GenBank N a.a.      VSDASRTSADDKWLPLYLLGLYRVGRTQMPEYRKXLMDGLTNQCKMINEQFEPLVPEGRD
     HR N a.a.      VSDASRTSADDKWLPLYLLGLYRVGRTQMPEYRKRLMDGLTNQCKMINEQFEPLVPEGRD
     M3 N a.a.      VSDASRTSADDKWLPLYLLGLYRVGRTQMPEYRKRLMDGLTNQCKMINEQFEPLVPEGRD
     M4 N a.a.      VSDASRTSADDKWLPLYLLGLYRVGRTQMPEYRKRLMDGLTNQCKMINEQFEPLVPEGRD

                    181                                                 240
GenBank N a.a.      IFDVWGNDSNYTKIVAAVDMFFHMFKKHECASFRYGTIVSRFKDCAALATFGHLCKITGM
     HR N a.a.      IFDVWGNDSNYTKIVAAVDMFFHMFKKHECASFRYGTIVSRFKDCAALATFGHLCKITGM
     M3 N a.a.      IFDVWGNDSNYTKIVAAVDMFFHMFKKHECASFRYGTIVSRFKDCAALATFGHLCKITGM
     M4 N a.a.      IFDVWGNDSNYTKIVAAVDMFFHMFKKHECASFRYGTIVSRFKDCAALATFGHLCKITGM

                    241                                                 300
GenBank N a.a.      STEDVTTWILNREVADEMVQMMLPGQEIDKADSYMPYLIDFGLSSKSPYSSVKNPAFHFW
     HR N a.a.      STEDVTTWILNREVADEMVQMMLPGQEIDKADSYMPYLIDFGLSSKSPYSSVKNPAFHFW
     M3 N a.a.      STEDVTTWILNREVADEMVQMMLPGQEIDKADSYMPYLIDFGLSSKSPYSSVKNPAFHFW
     M4 N a.a.      STEDVTTWILNREVADEMVQMMLPGQEIDKADSYMPYLIDFGLSSKSPYSSVKNPAFHFW

                    301                                                 360
GenBank N a.a.      GQLTALLLRSTRARNARQPDDIEYTSLTTAGLLYAYAVGSSADLAQQFCVGDNKYTPDDS
     HR N a.a.      GQLTALLLRSTRARNARQPDDIEYTSLTTAGLLYAYAVGSSADLAQQFCVGDSKYTPDDS
     M3 N a.a.      GQLTALLLRSTRARNARQPDDIEYTSLTTAGLLYAYAVGSSADLAQQFCVGDSKYTPDDS
     M4 N a.a.      GQLT..............DIEYTSXTTAGLLYAYAVGSSADLAXQFCVGDSKYTPDDS

                    361                                                 420
GenBank N a.a.      TGGLTTNAPPQGRDVVEWLGWFEDQNRKPTPDMMQYAKRAVMSLQGLREKTIGKYAKSEF
     HR N a.a.      TGGLTTNAPPQGRDVVEWLGWFEDQNRKPTPDMMQYAKRAVMSLQGLREKTIGKYAKSEF
     M3 N a.a.      TGGLTTNAPPQGRDVVEWLGWFEDQNRKPTPDMMQYAKRAVMSLQGLREKTIGKYAKSEF
     M4 N a.a.      TGGLTTNAPPQGRDVVEWLGWFEDQNRKPTPDMMQYAKRAVMSLQGLREKTIGKYAKSEF

                    421  423
GenBank N a.a.      DK.
     HR N a.a.      DK.
     M3 N a.a.      DK.
     M4 N a.a.      DK.
```

FIGURE 15

```
                    1                                                   60
GenBank P nucl.     ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTGGATCAGGCG
     HR P nucl.     ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
     M2 P nucl.     ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
     M3 P nucl.     ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
     M4 P nucl.     ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG

                    61                                                  120
GenBank P nucl.     GTAGGAGAGATAGATGAGATCGAAGCACAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
     HR P nucl.     GTAGGAGAGATAGATGAGATCGAAGCACAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
     M2 P nucl.     GTAGGAGAGATAGATGAGATCGAAGCACAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
     M3 P nucl.     GTAGGAGAGATAGATGAGATCGAAGCACAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
     M4 P nucl.     GTAGGAGAGATAGATGAGATCGAAGCACAACGAGCTGAAAAGTCCAATTATGAGTTGTTC

                    121                                                 180
GenBank P nucl.     CAAGAGGATTGGAGTGGAAGAGCATACTAAGCCCTCTTATTTTCAGGCAGCAGATGATTCT
     HR P nucl.     CAAGAGGACGGAGTGGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
     M2 P nucl.     CAAGAGGACGGAGTGGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
     M3 P nucl.     CAAGAGGACGGAGTGGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
     M4 P nucl.     CAAGAGGACGGAGTGGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT

                    181                                                 240
GenBank P nucl.     GACACAGAATCTGAACCAGAAATTGAAGACAATCAAGGTTTGTATGCACAGGATCCAGAA
     HR P nucl.     GACACAGAATCTGAACCAGAAATTGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
     M2 P nucl.     GACACAGAATCTGAACCAGAAATTGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
     M3 P nucl.     GACACAGAATCTGAACCAGAAATTGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
     M4 P nucl.     GACACAGAATCTGAACCAGAAATTGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA

                    241                                                 300
GenBank P nucl.     GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCTTTAGATGACTATGCAGATGAGGAAGTG
     HR P nucl.     GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCTTTAGATGACTATGCGGATGAGGACGTG
     M2 P nucl.     GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCTTTAGATGACTATGCGGATGAGGACGTG
     M3 P nucl.     GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCTTTAGATGACTATGCGGATGAGGACGTG
     M4 P nucl.     GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCTTTAGATGACTATGCGGATGAGGACGTG

                    301                                                 360
GenBank P nucl.     GATGTTGTATTTTACTTCGGACTGGAAACCACCTGAGCTTGAATCTGACGAGCATGGAAAG
     HR P nucl.     GATGTTGTATTCACTTCGGACTGGAAACAGCCTGAGCTTGAATCCGACGAGCATGGAAAG
     M2 P nucl.     GATGTTGTATTCACTTCGGACTGGAAACAGCCTGAGCTTGAATCCGACGAGCATGGAAAG
     M3 P nucl.     GATGTTGTATTCACTTCGGACTGGAAACAGCCTGAGCTTGAATCCGACGAGCATGGAAAG
     M4 P nucl.     GATGTTGTATTCACTTCGGACTGGAAACAGCCTGAGCTTGAATCCGACGAGCATGGAAAG

                    361                                                 420
GenBank P nucl.     ACCTTACGGTTGACATCGCCAGAGGGTTTAAGTGGAGAGCAGAAATCCCAGTGGCTTTCG
     HR P nucl.     ACCTTACGGTTGACATTGCCAGAGGGTTTAAGTGGAGAGCAGAAATCCCAGTGGCTTTTG
     M2 P nucl.     ACCTTACGGTTGACATTGCCAGAGGGTTTAAGTGGAGAGCAGAAATCCCAGTGGCTTTTG
     M3 P nucl.     ACCTTACGGTTGACATTGCCAGAGGGTTTAAGTGGAGAGCAGAAATCCCAGTGGCTTTTG
     M4 P nucl.     ACCTTACGGTTGACATTGCCAGAGGGTTTAAGTGGAGAGCAGAAATCCCAGTGGCTTTTG
```

FIGURE 16-1

```
                    421                                                 480
GenBank P nucl.     ACGATTAAAGCAGTCGTGCAAAGTGCCAAATACTGGAATCTGGCAGAGTGCACATTTGAA
     HR P nucl.     ACGATTAAAGCAGTCGTTCAAAGTGCCAAACACTGGAATCTGGCAGAGTGCACATTTGAA
     M2 P nucl.     ACGATTAAAGCAGTCGTTCAAAGTGCCAAACACTGGAATCTGGCAGAGTGCACATTTGAA
     M3 P nucl.     ACGATTAAAGCAGTCGTTCAAAGTGCCAAACACTGGAATCTGGCAGAGTGCACATTTGAA
     M4 P nucl.     ACGATTAAAGCAGTCGTTCAAAGTGCCAAACACTGGAATCTGGCAGAGTGCACATTTGAA

                    481                                                 540
GenBank P nucl.     GCATCGGGAGAAGGGGTCATTATGAAGGAGCGCCAGATAACTCCGGATGTATATAAGGTC
     HR P nucl.     GCATCGGGAGAAGGGGTCATCATAAAAAAAGCGCCAGATAACTCCGGATGTATATAAGGTC
     M2 P nucl.     GCATCGGGAGAAGGGGTCATCATAAAAAAAGCGCCAGATAACTCCGGATGTATATAAGGTC
     M3 P nucl.     GCATCGGGAGAAGGGGTCATCATAAAAAAAGCGCCAGATAACTCCGGATGTATATAAGGTC
     M4 P nucl.     GCATCGGGAGAAGGGGTCATCATAAAAAAAGCGCCAGATAACTCCGGATGTATATAAGGTC

                    541                                                 600
GenBank P nucl.     ACTCCAGTGATGAACACACATCCGTCCCAATCAGAAGCAGTATCAGATGTTTGGTCTCTC
     HR P nucl.     ACTCCAGTGATGAACACACATCCGTCCCAATCAGAAGCCGTATCAGATGTTTGGTCTCTC
     M2 P nucl.     ACTCCAGTGATGAACACACATCCGTCCCAA.............................
     M3 P nucl.     ACTCCAGTGATGAACACACATCCGTCCCAATCGGAAGCCGTATCAGATGTTTGGTCTCTC
     M4 P nucl.     ACTCCAGTGATGAACACACATCCGTCCCAATCAGAAGCCGTATCAGATGTTTGGTCTCTC

                    601                                                 660
GenBank P nucl.     TCAAAGACATCCATGACTTTCCAACCCAAGAAAGCAAGTCTTCAGCCTCTCACCATATCC
     HR P nucl.     TCAAAGACATCCATGACTTTCCAACCCAAGAAAGCAAGTCTTCAGCCTCTCACCATATCC
     M2 P nucl.     ............................................................
     M3 P nucl.     TCAAAGACATCCATGACTTTCCAACCCAAGAAAGCAAGTCTTCAGCCTCTCACCATATCC
     M4 P nucl.     TCAAAGACATCCATGACTTTCCAACCCAAGAAAGCAAGTCTTCAGCCTCTCACCATATCC

                    661                                                 720
GenBank P nucl.     TTGGATGAATTGTTCTCATCTAGAGGAGACTTCATCTCTGTCGGAGGTCACGGACGAATG
     HR P nucl.     TTGGATGAATTGTTCTCATCTAGAGGAGAATTCATCTCTGTCGGAGGTAACGGACGAATG
     M2 P nucl.     ............................................................
     M3 P nucl.     TTGGATGAATTGTTCTCATCTAGAGGAGAATTCATCTCTGTCGGAGGTAACGGACGAATG
     M4 P nucl.     TTGGATGAATTGTTCTCATCTAGAGGAGAATTCATCTCTGTCGGAGGTAACGGACGAATG

                    721                                                 780
GenBank P nucl.     TCTCATAAAGAGGCCATCCTGCTCGGCCTGAGATACAAAAAGTTGTACAATCAGGCGAGA
     HR P nucl.     TCTCATAAAGAGGCCATCCTGCTCGGTCTGAGGTACAAAAAGTTGTACAATCAGGCGAGA
     M2 P nucl.     ............................................................
     M3 P nucl.     TCTCATAAAGAGGCCATCCTGCTCGGTCTGAGGTACAAAAAGTTGTACAATCAGGCGAGA
     M4 P nucl.     TCTCATAAAGAGGCCATCCTGCTCGGTCTGAGGTACAAAAAGTTGTACAATCAGGCGAGA

                    781             798
GenBank P nucl.     GTCAAATATTCTCTGTAG
     HR P nucl.     GTCAAATATTCTCTGTAG
     M2 P nucl.     ..................
     M3 P nucl.     GTCAAATATTCTCTGTAG
     M4 P nucl.     GTCAAATATTCTCTGTAG
```

FIGURE 16-2

```
                    1                                                    60
GenBank P a.a.      MDNLTKVREYLKSYSRLDQAVGEIDEIEAQRAEKSNYELFQEDGVEEHTKPSYFQAADDS
     HR P a.a.      MDNLTKVREYLKSYSRLDQAVGEIDEIEAQRAEKSNYELFQEDGVEEHTRPSYFQAADDS
     M2 P a.a.      MDNLTKVREYLKSYSRLDQAVGEIDEIEAQRAEKSNYELFQEDGVEEHTRPSYFQAADDS
     M3 P a.a.      MDNLTKVREYLKSYSRLDQAVGEIDEIEAQRAEKSNYELFQEDGVEEHTRPSYFQAADDS
     M4 P a.a.      MDNLTKVREYLKSYSRLDQAVGEIDEIEAQRAEKSNYELFQEDGVEEHTRPSYFQAADDS

                    61                                                   120
GenBank P a.a.      DTESEPEIEDNQGLYAQDPEAEQVEGFIQGPLDDYADEEVDVVFTSDWKPPELESDEHGK
     HR P a.a.      DTESEPEIEDNQGLYVPDPEAEQVEGFIQGPLDDYADEDVDVVFTSDWKQPELESDEHGK
     M2 P a.a.      DTESEPEIEDNQGLYVPDPEAEQVEGFIQGPLDDYADEDVDVVFTSDWKQPELESDEHGK
     M3 P a.a.      DTESEPEIEDNQGLYVPDPEAEQVEGFIQGPLDDYADEDVDVVFTSDWKQPELESDEHGK
     M4 P a.a.      DTESEPEIEDNQGLYVPDPEAEQVEGFIQGPLDDYADEDVDVVFTSDWKQPELESDEHGK

                    121                                                  180
GenBank P a.a.      TLRLTSPEGLSGEQKSQWLSTIKAVVQSAKYWNLAECTFEASGEGVIMKERQITPDVYKV
     HR P a.a.      TLRLTLPEGLSGEQKSQWLLTIKAVVQSAKHWNLAECTFEASGEGVIIKKRQITPDVYKV
     M2 P a.a.      TLRLTLPEGLSGEQKSQWLLTIKAVVQSAKHWNLAECTFEASGEGVIIKKRQITPDVYKV
     M3 P a.a.      TLRLTLPEGLSGEQKSQWLLTIKAVVQSAKHWNLAECTFEASGEGVIIKKRQITPDVYKV
     M4 P a.a.      TLRLTLPEGLSGEQKSQWLLTIKAVVQSAKHWNLAECTFEASGEGVIIKKRQITPDVYKV

                    181                                                  240
GenBank P a.a.      TPVMNTHPSQSEAVSDVWSLSKTSMTFQPKKASLQPLTISLDELFSSRGEFISVGGDGRM
     HR P a.a.      TPVMNTHPSQSEAVSDVWSLSKTSMTFQPKKASLQPLTISLDELFSSRGEFISVGGNGRM
     M2 P a.a.      TPVMNTHPSQ..................................................
     M3 P a.a.      TPVMNTHPSQSEAVSDVWSLSKTSMTFQPKKASLQPLTISLDELFSSRGEFISVGGNGRM
     M4 P a.a.      TPVMNTHPSQSEAVSDVWSLSKTSMTFQPKKASLQPLTISLDELFSSRGEFISVGGNGRM

                    241                 266
GenBank P a.a.      SHKEAILLGLRYKKLYNQARVKYSL
     HR P a.a.      SHKEAILLGLRYKKLYNQARVKYSL
     M2 P a.a.      .........................
     M3 P a.a.      SHKEAILLGLRYKKLYNQARVKYSL
     M4 P a.a.      SHKEAILLGLRYKKLYNQARVKYSL
```

FIGURE 17

```
                    1                                                   60
GenBank M nucl.     ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
     HR M nucl.     ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
     M3 M nucl.     ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
     M4 M nucl.     ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA

                    61                                                  120
GenBank M nucl.     GGGATCGCACCACCCCCTTATGAAGAGGACACTAGCATGGAGTATGCTCCGAGCGCTCCA
     HR M nucl.     GGGATCGCACCACCCCCTTATGAAGAGGACACTAACATGGAGTATGCTCCGAGCGCTCCA
     M3 M nucl.     GGGATCGCACCACCCCCTTATGAAGAGGACACTAACATGGAGTATGCTCCGAGCGCTCCA
     M4 M nucl.     GGGATCGCACCACCCCCTTATGAAGAGGACACTAACATGGAGTATGCTCCGAGCGCTCCA

                    121                                                 180
GenBank M nucl.     ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACACCTATGATCCGAATCAATTAAGA
     HR M nucl.     ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACACTCATGATCCGCATCAATTAAGA
     M3 M nucl.     ATTGACAAATCCTATTTTGGAGTTGACGAGAGGGACACTCATGATCCGCATCAATTAAGA
     M4 M nucl.     ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACACTCATGATCCGCATCAATTAAGA

                    181                                                 240
GenBank M nucl.     TATGAGAAATTCTTCTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTCAGAACA
     HR M nucl.     TATGAGAAATTCTTCTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTCAGAACA
     M3 M nucl.     TATGAGAAATTCTTCTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTCAGAACA
     M4 M nucl.     TATGAGAAATTCTTCTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTCAGAACA

                    241                                                 300
GenBank M nucl.     TACTCAGATGTGGCAGCCGCTGTATCCCATTGGGATCACATGTACATCGGAATGGCAGGG
     HR M nucl.     TACTCAGATGTGGCAGCCGCTGTATCCCATTGGGATCACATGTACATCGGAATGGCAGGG
     M3 M nucl.     TACTCAGATGTGGCAGCCGCTGTATCCCATTGGGATCACATGTACATCGGAATGGCAGGG
     M4 M nucl.     TACTCAGATGTGGCAGCCGCTGTATCCCATTGGGATCACATGTACATCGGAATGGCAGGG

                    301                                                 360
GenBank M nucl.     AAACGTCCCTTCTACAAAATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
     HR M nucl.     AAACGTCCCTTCTACAAGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
     M3 M nucl.     AAACGTCCCTTCTACAAGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
     M4 M nucl.     AAACGTCCCTTCTACAAGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA

                    361                                                 420
GenBank M nucl.     GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCACACTCACTGCGAAGGCAGGGCTTAT
     HR M nucl.     GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCACGCTCACTGTGAAGGCAGGGCTTAT
     M3 M nucl.     GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCACGCTCACTGTGAAGGCAGGGCTTAT
     M4 M nucl.     GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCACGCTCACTGTGAAGGCAGGGCTTAT

                    421                                                 480
GenBank M nucl.     TTGCCACATTAGCATGGGGAAGACCCCTCCCATGCTCAATGTACCAGAGCACTTCAGAAGA
     HR M nucl.     TTGCCACACAGAATGGGGAAGACCCCTCCCATGCTCAATGTACCAGAGCACTTCAGAAGA
     M3 M nucl.     TTGCCACACAGAATGGGGAAGACCCCTCCCATGCTCAATGTACCAGAGCACTTCAGAAGA
     M4 M nucl.     TTGCCACACAGAATGGGGAAGACCCCTCCCATGCTCAATGTACCAGAGCACTTCAGAAGA

                    481                                                 540
GenBank M nucl.     CCATTCAATATAGGTCTTTACAAGGGAACGATTGAGCTCACAATGACCATCTACGATGAT
     HR M nucl.     CCATTCAATATAGGTCTTTACAAGGGAACGGTTGAGCTCACAATGACCATCTACGATGAT
     M3 M nucl.     CCATTCAATATAGGTCTTTACAAGGGAACGGTTGAGCTCACAATGACCATCTACGATGAT
     M4 M nucl.     CCATTCAATATAGGTCTTTACAAGGGAACGGTTGAGCTCACAATGACCATCTACGATGAT
```

FIGURE 18-1

```
                  541                                                   600
GenBank M nucl.   GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTCAATTCTTCCAAATTTTCTGAT
     HR M nucl.   GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTCAATTCTTCCAAATTTTCTGAT
     M3 M nucl.   GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTCAATTCTTCCAAATTTTCTGAT
     M4 M nucl.   GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTCAATTCTTCCAAATTTTCTGAT

                  601                                                   660
GenBank M nucl.   TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCGTGG
     HR M nucl.   TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCTTGG
     M3 M nucl.   TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCTTGG
     M4 M nucl.   TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCTTGG

                  661                          690
GenBank M nucl.   GTCCTGGATTCTATCAGCCACTTCAAATGA
     HR M nucl.   GTCCTGGATTCTGTCAGCCACTTCAAATGA
     M3 M nucl.   GTCCTGGATTCTGTCAGCCACTTCAAATGA
     M4 M nucl.   GTCCTGGATTCTGTCAGCCACTTCAAATGA
```

FIGURE 18-2

```
                    1                                                   60
GenBank M a.a.      MSSLKKILGLKGKGKKSKKLGIAPPPYEEDTSMEYAPSAPIDKSYFGVDEMDTYDPNQLR
     HR M a.a.      MSSLKKILGLKGKGKKSKKLGIAPPPYEEDTNMEYAPSAPIDKSYFGVDEMDTHDPHQLR
     M4 M a.a.      MSSLKKILGLKGKGKKSKKLGIAPPPYEEDTNMEYAPSAPIDKSYFGVDEMDTHDPHQLR
     M3 M a.a.      MSSLKKILGLKGKGKKSKKLGIAPPPYEEDTNMEYAPSAPIDKSYFGVDERDTHDPHQLR

                    61                                                  120
GenBank M a.a.      YEKFFFTVKMTVRSNRPFRTYSDVAAAVSHWDHMYIGMAGKRPFYKILAFLGSSNLKATP
     HR M a.a.      YEKFFFTVKMTVRSNRPFRTYSDVAAAVSHWDHMYIGMAGKRPFYKILAFLGSSNLKATP
     M4 M a.a.      YEKFFFTVKMTVRSNRPFRTYSDVAAAVSHWDHMYIGMAGKRPFYKILAFLGSSNLKATP
     M3 M a.a.      YEKFFFTVKMTVRSNRPFRTYSDVAAAVSHWDHMYIGMAGKRPFYKILAFLGSSNLKATP

                    121                                                 180
GenBank M a.a.      AVLADQGQPEYHTHCEGRAYLPHRMGKTPPMLNVPEHFRRPFNIGLYKGTIELTMTIYDD
     HR M a.a.      AVLADQGQPEYHAHCEGRAYLPHRMGKTPPMLNVPEHFRRPFNIGLYKGTVELTMTIYDD
     M4 M a.a.      AVLADQGQPEYHAHCEGRAYLPHRMGKTPPMLNVPEHFRRPFNIGLYKGTVELTMTIYDD
     M3 M a.a.      AVLADQGQPEYHAHCEGRAYLPHRMGKTPPMLNVPEHFRRPFNIGLYKGTVELTMTIYDD

                    181                                             230
GenBank M a.a.      ESLEAAPMIWDHFNSSKFSDFREKALMFGLIVEKKASGAWVLDSISHFK.
     HR M a.a.      ESLEAAPMIWDHFNSSKFSDFREKALMFGLIVEKKASGAWVLDSVSHFK.
     M4 M a.a.      ESLEAAPMIWDHFNSSKFSDFREKALMFGLIVEKKASGAWVLDSVSHFK.
     M3 M a.a.      ESLEAAPMIWDHFNSSKFSDFREKALMFGLIVEKKASGAWVLDSVSHFK.
```

FIGURE 19

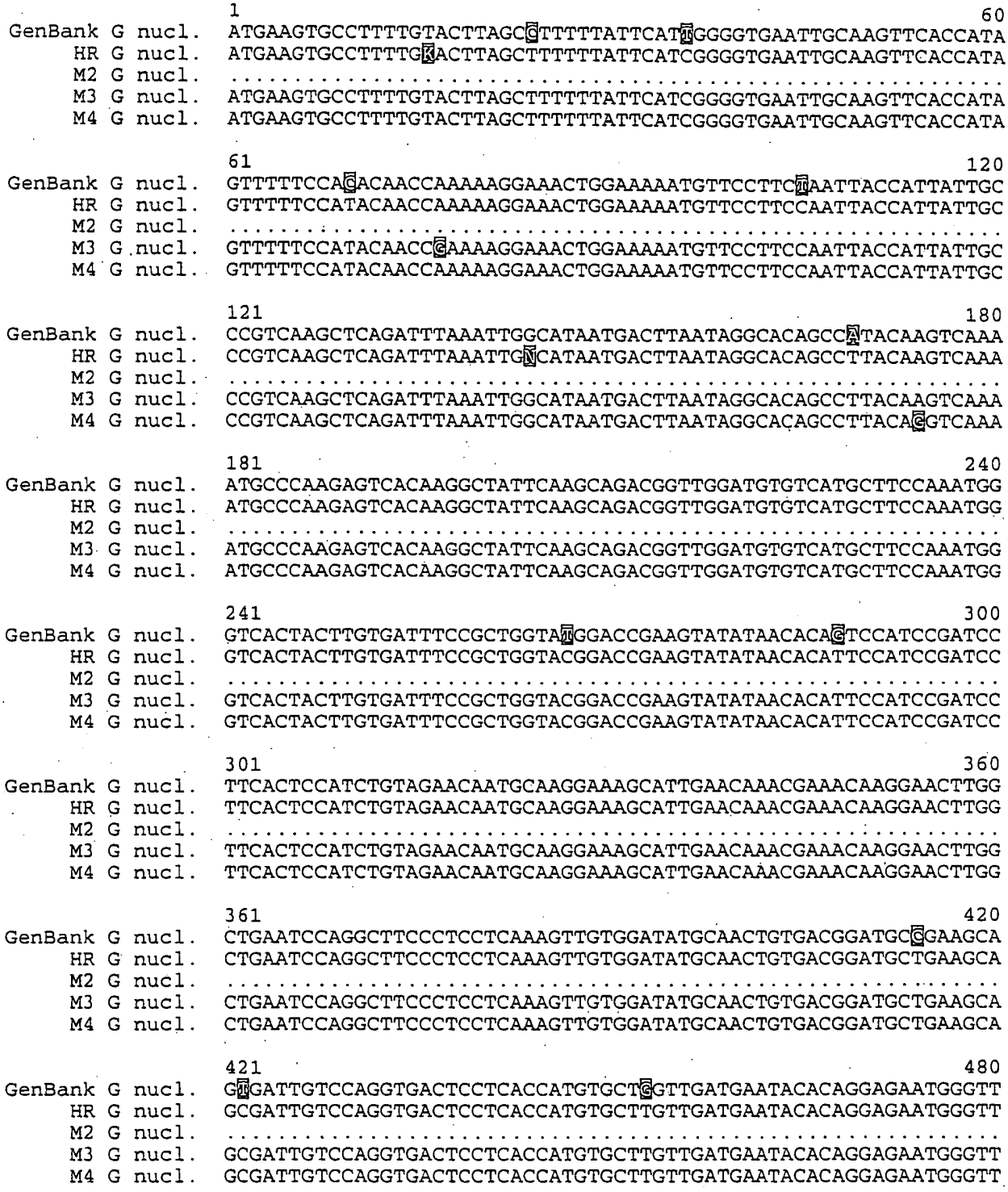

1 60
GenBank G nucl. ATGAAGTGCCTTTTGTACTTAGCGTTTTTATTCATTGGGGGTGAATTGCAAGTTCACCATA
HR G nucl. ATGAAGTGCCTTTTGKACTTAGCTTTTTTATTCATCGGGGTGAATTGCAAGTTCACCATA
M2 G nucl. .....
M3 G nucl. ATGAAGTGCCTTTTGTACTTAGCTTTTTTATTCATCGGGGTGAATTGCAAGTTCACCATA
M4 G nucl. ATGAAGTGCCTTTTGTACTTAGCTTTTTTATTCATCGGGGTGAATTGCAAGTTCACCATA
61 120
GenBank G nucl. GTTTTTCCACACAACCAAAAAGGAAACTGGAAAAATGTTCCTTCTAAATTACCATTATTGC
HR G nucl. GTTTTTCCATACAACCAAAAAGGAAACTGGAAAAATGTTCCTTCCAATTACCATTATTGC
M2 G nucl. .....
M3 G nucl. GTTTTTCCATACAACCGAAAAGGAAACTGGAAAAATGTTCCTTCCAATTACCATTATTGC
M4 G nucl. GTTTTTCCATACAACCAAAAAGGAAACTGGAAAAATGTTCCTTCCAATTACCATTATTGC
121 180
GenBank G nucl. CCGTCAAGCTCAGATTTAAATTGGCATAATGACTTAATAGGCACAGCCAACAAGTCAAA
HR G nucl. CCGTCAAGCTCAGATTTAAATTGNCATAATGACTTAATAGGCACAGCCTTACAAGTCAAA
M2 G nucl. .....
M3 G nucl. CCGTCAAGCTCAGATTTAAATTGGCATAATGACTTAATAGGCACAGCCTTACAAGTCAAA
M4 G nucl. CCGTCAAGCTCAGATTTAAATTGGCATAATGACTTAATAGGCACAGCCTTACAGGTCAAA
181 240
GenBank G nucl. ATGCCCAAGAGTCACAAGGCTATTCAAGCAGACGGTTGGATGTGTCATGCTTCCAAATGG
HR G nucl. ATGCCCAAGAGTCACAAGGCTATTCAAGCAGACGGTTGGATGTGTCATGCTTCCAAATGG
M2 G nucl. .....
M3 G nucl. ATGCCCAAGAGTCACAAGGCTATTCAAGCAGACGGTTGGATGTGTCATGCTTCCAAATGG
M4 G nucl. ATGCCCAAGAGTCACAAGGCTATTCAAGCAGACGGTTGGATGTGTCATGCTTCCAAATGG
241 300
GenBank G nucl. GTCACTACTTGTGATTTCCGCTGGTAATGGACCGAAGTATATAACACACGTCCATCCGATCC
HR G nucl. GTCACTACTTGTGATTTCCGCTGGTACGGACCGAAGTATATAACACATTCCATCCGATCC
M2 G nucl. .....
M3 G nucl. GTCACTACTTGTGATTTCCGCTGGTACGGACCGAAGTATATAACACATTCCATCCGATCC
M4 G nucl. GTCACTACTTGTGATTTCCGCTGGTACGGACCGAAGTATATAACACATTCCATCCGATCC
301 360
GenBank G nucl. TTCACTCCATCTGTAGAACAATGCAAGGAAAGCATTGAACAAACGAAACAAGGAACTTGG
HR G nucl. TTCACTCCATCTGTAGAACAATGCAAGGAAAGCATTGAACAAACGAAACAAGGAACTTGG
M2 G nucl. .....
M3 G nucl. TTCACTCCATCTGTAGAACAATGCAAGGAAAGCATTGAACAAACGAAACAAGGAACTTGG
M4 G nucl. TTCACTCCATCTGTAGAACAATGCAAGGAAAGCATTGAACAAACGAAACAAGGAACTTGG
361 420
GenBank G nucl. CTGAATCCAGGCTTCCCTCCTCAAAGTTGTGGATATGCAACTGTGACGGATGCCGAAGCA
HR G nucl. CTGAATCCAGGCTTCCCTCCTCAAAGTTGTGGATATGCAACTGTGACGGATGCTGAAGCA
M2 G nucl. .....
M3 G nucl. CTGAATCCAGGCTTCCCTCCTCAAAGTTGTGGATATGCAACTGTGACGGATGCTGAAGCA
M4 G nucl. CTGAATCCAGGCTTCCCTCCTCAAAGTTGTGGATATGCAACTGTGACGGATGCTGAAGCA
421 480
GenBank G nucl. GTGATTGTCCAGGTGACTCCTCACCATGTGCTGGTTGATGAATACACAGGAGAATGGGTT
HR G nucl. GCGATTGTCCAGGTGACTCCTCACCATGTGCTTGTTGATGAATACACAGGAGAATGGGTT
M2 G nucl. .....
M3 G nucl. GCGATTGTCCAGGTGACTCCTCACCATGTGCTTGTTGATGAATACACAGGAGAATGGGTT
M4 G nucl. GCGATTGTCCAGGTGACTCCTCACCATGTGCTTGTTGATGAATACACAGGAGAATGGGTT

FIGURE 20-1

```
                    481                                                 540
GenBank G nucl.  GATTCACAGTTCATCAACGGAAAATGCAGCAATTACATATGCCCCACTGTCCATAACTCT
     HR G nucl.  GATTCACAGTTCATCAACGGAAAATGCAGCAATGACATATGCCCCACTGTCCATAACTCC
     M2 G nucl.  ............................................................
     M3 G nucl.  GATTCACAGTTCATCAACGGAAAATGCAGCAATGACATATGCCCCACTGTCCATAACTCC
     M4 G nucl.  GATTCACAGTTCATCAACGGAAAATGCAGCAATGACATATGCCCCACTGTCCATAACTCC

                    541                                                 600
GenBank G nucl.  ACAACCTGGCATTCTGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG
     HR G nucl.  ACAACCTGGCATTCCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG
     M2 G nucl.  ............................................................
     M3 G nucl.  ACAACCTGGCATTCCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG
     M4 G nucl.  ACAACCTGGCATTCCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG

                    601                                                 660
GenBank G nucl.  GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTGGGAAAGGAGGGCACAGGG
     HR G nucl.  GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTAGGAAAGGAGGGCACAGGG
     M2 G nucl.  ............................................................
     M3 G nucl.  GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTAGGAAAGGAGGGCACAGGG
     M4 G nucl.  GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTAGGAAAGGAGGGCACAGGG

                    661                                                 720
GenBank G nucl.  TTCAGAAGTAACTACTTTGCTTATGAAACTGGAGGCAAGGCCTGCAAAATGCAATACTGC
     HR G nucl.  TTCAGAAGTAACTACTTTGCTTATGAAACTGGAGACAAGGCCTGCAAAATGCAGTACTGC
     M2 G nucl.  ............................................................
     M3 G nucl.  TTCAGAAGTAACTACTTTGCTTATGAAACTGGAGACAAGGCCTGCAAAATGCAGTACTGC
     M4 G nucl.  TTCAGAAGTAACTACTTTGCTTATGAAACTGGAGACAAGGCCTGCAAAATGCAGTACTGC

                    721                                                 780
GenBank G nucl.  AAGCATTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGAGATGGCTGATAAGGATCTC
     HR G nucl.  AAGCGTTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGAGATGGCTGATAAGGATCTC
     M2 G nucl.  ............................................................
     M3 G nucl.  AAGCATTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGAGATGGCTGATAAGGATCTC
     M4 G nucl.  AAGCGTTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGGGATGGCTGATAAGGATCTC

                    781                                                 840
GenBank G nucl.  TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG
     HR G nucl.  TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG
     M2 G nucl.  ..........................................................CCATCTCAG
     M3 G nucl.  TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG
     M4 G nucl.  TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG

                    841                                                 900
GenBank G nucl.  ACCTCAGTGGATGTAAGTCTAATTCAGGACGTTGAGAGGATCTTGGATTATTCCCTCTGC
     HR G nucl.  ACCTCAGTGGATGTAAGTCTCATTCAGGACGTTGAGAGGATCTTG..............
     M2 G nucl.  ACCTCAGTGGATGTAAGTCTCATTCAGGACGTTGAGAGGATCTTGGATTATTCCCTCTGC
     M3 G nucl.  ACCTCAGTGGATGTAAGTCTCATTCAGGACGTTGAGAGGATCTTGGATTATTCCCTCTGC
     M4 G nucl.  ACCTCAGTGGATGTAAGTCTCATTCAGGACGTTGAGAGGATCT..............
```

FIGURE 20-2

```
                    901                                                 960
GenBank G nucl.  CAAGAAACCTGGAGCAAAATCAGAGCGGGTCTTCCAATCTCTCCAGTGGATCTCAGCTAT
     HR G nucl.  ............................................................
     M2 G nucl.  CAAGAAACCTGGAGCAAAATCAGAGCGGGTCTTCCCATCTCTCCAGTGGATCTCAGCTAT
     M3 G nucl.  CAAGAAACCTGGAGCAAAATCAGAGCGGGTCTTCCCATCTCTCCAGTGGATCTCAGCTAT
     M4 G nucl.  ............................................................

                    961                                                1020
GenBank G nucl.  CTTGCTCCTAAAAACCCAGGAACCGGTCCTGCTTTCACCATAATCAATGGTACCCTAAAA
     HR G nucl.  ............................................................
     M2 G nucl.  CTTGCTCCTAAAAACCCAGGAACCGGTCCTGTCGTTTACCATAATCAATGGTACCCTAAAA
     M3 G nucl.  CTTGCTCCTAAAAACCCAGGAACCGGTCCTGCTTTCACCATAATCAATGGTACCCTAAAA
     M4 G nucl.  ............................................................

                    1021                                               1080
GenBank G nucl.  TACTTTGAGACCAGATACATCAGAGTCGATATTGCTGCTCCAATCCTCTCAAGAATGGTC
     HR G nucl.  ............................................................
     M2 G nucl.  TACTTTGAGACCAGATACATCAGAGTCGATATTGCTGCTCCAATCCTCTCAAGAATGGTC
     M3 G nucl.  TACTTTGAGACCAGATACATCAGAGTCGATATTGCTGCTCCAATCCTCTCAAGAATGGTC
     M4 G nucl.  TACTTTGAGACCAGATACATCAGAGTCGATATTGCTGCTCCAATCCTCTCAAGAATGGTC

                    1081                                               1140
GenBank G nucl.  GGAATGATCAGTGGAACTACCACAGAAAGGGAACTGTGGGATGACTGGGCACCATATGAA
     HR G nucl.  ............................................................
     M2 G nucl.  GGAATGATCAGTGGAACTACCACAGAAAGGGAACTGTGGGATGACTGGGCTCCATATGAA
     M3 G nucl.  GGAATGATCAGTGGAACTACCACAGAAAGGGAACTGTGGGATGACTGGGCTCCATATGAA
     M4 G nucl.  GGAATGATCAGTGGAACTACCACAGAAAGGGAACTGTGGGATGACTGGGCTCCATATGAA

                    1141                                               1200
GenBank G nucl.  GACGTGGAAATTGGACCCAATGGAGTTCTGAGGACCAGTTCAGGATATAAGTTTCCTTTA
     HR G nucl.  ............................................................
     M2 G nucl.  GACGTGGAAATTGGACCCAATGGAGTTCTGAGGACCAGTTCAGGATATAAGTTTCCTTTA
     M3 G nucl.  GACGTGGAAATTGGACCCAATGGAGTTCTGAGGACCAGTTCAGGATATAAGTTTCCTTTA
     M4 G nucl.  GACGTGGAAATTGGACCCAATGGAGTTCTGAGGACCAGTTCAGGATATAAGTTTCCTTTA

                    1201                                               1260
GenBank G nucl.  TACATGATTGGACATGGTATGTTGGACTCCGATCTTCATCTTAGCTCAAAGGCTCAGGTG
     HR G nucl.  ............................................................
     M2 G nucl.  TATATGATTGGACATGGTATGTTGGACTCCGATCTTCATCTTAGCTCAAAGGCTCAGGTG
     M3 G nucl.  TATATGATTGGACATGGTATGTTGGACTCCGATCTTCATCTTAGCTCAAAGGCTCAGGTG
     M4 G nucl.  TATATGATTGGACATGGTATGTTGGACTCCGATCTTCATCTTAGCTCAAAGGCTCAGGTG

                    1261                                               1320
GenBank G nucl.  TTCGAACATCCTCACATTCAAGACGCTGCTTCGCAACTTCCTGATGATGAGACTTTATTT
     HR G nucl.  ............................................................
     M2 G nucl.  TTTGAACATCCTCACATTCAAGACGCTGCTTCGCAGCTTCCTGATGATGAGACTTTATTT
     M3 G nucl.  TTTGAACATCCTCACATTCAAGACGCTGTTGCGCAGCTTCCTGATGATGAGACTTTATTT
     M4 G nucl.  TTTGAACATCCTCACATTCAAGACGCTGCTTCGCAGCTTCCTGATGATGAGACTTTATTT
```

FIGURE 20-3

```
                    1321                                                1380
GenBank G nucl.     TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGCTTGTAGAAGGTTGGTTCAGTAGT
     HR G nucl.     ............................................................
     M2 G nucl.     TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTTGTAGAAGGTTGGTTCAGTAGT
     M3 G nucl.     TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTTGTAGAAGGTTGGTTCAGTAGT
     M4 G nucl.     TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTTGTAGAAGGTTGGTTCAGTAGT

                    1381                                                1440
GenBank G nucl.     TGGAAAAAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
     HR G nucl.     ............................................................
     M2 G nucl.     TGGAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
     M3 G nucl.     TGGAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
     M4 G nucl.     TGGAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG

                    1441                                                1500
GenBank G nucl.     GTTCTCCGAGTTGGTATCCATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
     HR G nucl.     ............................................................
     M2 G nucl.     GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
     M3 G nucl.     GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
     M4 G nucl.     GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT

                    1501                1536
GenBank G nucl.     TATACAGACATAGAGATGAACCGACTTGGAAAGTAA
     HR G nucl.     ....................................
     M2 G nucl.     TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
     M3 G nucl.     TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
     M4 G nucl.     TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
```

FIGURE 20-4

```
                    1                                                   60
GenBank G a.a.      MKCLLYLAFLFIGVNCKFTIVFPXNQKGNWKNVPSNYHYCPSSSDLNWHNDLIGTAXQVK
     HR G a.a.      MKCLLXLAFLFIGVNCKFTIVFPYNQKGNWKNVPSNYHYCPSSSDLNXHNDLIGTALQVK
     M2 G a.a.      ............................................................
     M3 G a.a.      MKCLLYLAFLFIGVNCKFTIVFPYNXKGNWKNVPSNYHYCPSSSDLNWHNDLIGTALQVK
     M4 G a.a.      MKCLLYLAFLFIGVNCKFTIVFPYNQKGNWKNVPSNYHYCPSSSDLNWHNDLIGTALQVK

                    61                                                  120
GenBank G a.a.      MPKSHKAIQADGWMCHASKWVTTCDFRWYGPKYITXSIRSFTPSVEQCKESIEQTKQGTW
     HR G a.a.      MPKSHKAIQADGWMCHASKWVTTCDFRWYGPKYITHSIRSFTPSVEQCKESIEQTKQGTW
     M2 G a.a.      ............................................................
     M3 G a.a.      MPKSHKAIQADGWMCHASKWVTTCDFRWYGPKYITHSIRSFTPSVEQCKESIEQTKQGTW
     M4 G a.a.      MPKSHKAIQADGWMCHASKWVTTCDFRWYGPKYITHSIRSFTPSVEQCKESIEQTKQGTW

                    121                                                 180
GenBank G a.a.      LNPGFPPQSCGYATVTDAEAXIVQVTPHHVLVDEYTGEWVDSQFINGKCSNXICPTVHNS
     HR G a.a.      LNPGFPPQSCGYATVTDAEAAIVQVTPHHVLVDEYTGEWVDSQFINGKCSNDICPTVHNS
     M2 G a.a.      ............................................................
     M3 G a.a.      LNPGFPPQSCGYATVTDAEAAIVQVTPHHVLVDEYTGEWVDSQFINGKCSNDICPTVHNS
     M4 G a.a.      LNPGFPPQSCGYATVTDAEAAIVQVTPHHVLVDEYTGEWVDSQFINGKCSNDICPTVHNS

                    181                                                 240
GenBank G a.a.      TTWHSDYKVKGLCDSNLISMDITFFSEDGELSSLGKEGTGFRSNYFAYETGXKACKMQYC
     HR G a.a.      TTWHSDYKVKGLCDSNLISMDITFFSEDGELSSLGKEGTGFRSNYFAYETGDKACKMQYC
     M2 G a.a.      ............................................................
     M3 G a.a.      TTWHSDYKVKGLCDSNLISMDITFFSEDGELSSLGKEGTGFRSNYFAYETGDKACKMQYC
     M4 G a.a.      TTWHSDYKVKGLCDSNLISMDITFFSEDGELSSLGKEGTGFRSNYFAYETGDKACKMQYC

                    241                                                 300
GenBank G a.a.      KHWGVRLPSGVWFEMADKDLFAAARFPECPEGSSISAPSQTSVDVSLIQDVERILDYSLC
     HR G a.a.      KXWGVRLPSGVWFEMADKDLFAAARFPECPEGSSISAPSQTSVDVSLIQDVERIL.....
     M2 G a.a.      ..................................PSQTSVDVSLIQDVERILDYSLC
     M3 G a.a.      KHWGVRLPSGVWFEMADKDLFAAARFPECPEGSSISAPSQTSVDVSLIQDVERILDYSLC
     M4 G a.a.      KXWGVRLPSGVWFXMADKDLFAAARFPECPEGSSISAPSQTSVDVSLIQDVERI......

                    301                                                 360
GenBank G a.a.      QETWSKIRAGLPISPVDLSYLAPKNPGTGPAFTIINGTLKYFETRYIRVDIAAPILSRMV
     HR G a.a.      ............................................................
     M2 G a.a.      QETWSKIRAGLPISPVDLSYLAPKNPGTGPXFTIINGTLKYFETRYIRVDIAAPILSRMV
     M3 G a.a.      QETWSKIRAGLPISPVDLSYLAPKNPGTGPAFTIINGTLKYFETRYIRVDIAAPILSRMV
     M4 G a.a.      ..........................................YFETRYIRVDIAAPILSRMV

                    361                                                 420
GenBank G a.a.      GMISGTTTERELWDDWAPYEDVEIGPNGVLRTSSGYKFPLYMIGHGMLDSDLHLSSKAQV
     HR G a.a.      ............................................................
     M2 G a.a.      GMISGTTTERELWDDWAPYEDVEIGPNGVLRTSSGYKFPLYMIGHGMLDSDLHLSSKAQV
     M3 G a.a.      GMISGTTTERELWDDWAPYEDVEIGPNGVLRTSSGYKFPLYMIGHGMLDSDLHLSSKAQV
     M4 G a.a.      GMISGTTTERELWDDWAPYEDVEIGPNGVLRTSSGYKFPLYMIGHGMLDSDLHLSSKAQV
```

FIGURE 21-1

```
                    421                                                 480
GenBank G a.a.   FEHPHIQDAASQLPDDESLFFGDTGLSKNPIELVEGWFSSWKSSIASFFFIIGLIIGLFL
     HR G a.a.   ................................................................
     M2 G a.a.   FEHPHIQDAASQLPDDETLFFGDTGLSKNPIEFVEGWFSSWKSSIASFFFIIGLIIGLFL
     M3 G a.a.   FEHPHIQDAXAQLPDDETLFFGDTGLSKNPIEFVEGWFSSWKSSIASFFFIIGLIIGLFL
     M4 G a.a.   FEHPHIQDAASQLPDDETLFFGDTGLSKNPIEFVEGWFSSWKSSIASFFFIIGLIIGLFL

                    481                                 512
GenBank G a.a.   VLRVGIHLCIKLKHTKKRQIYTDIEMNRLGK
     HR G a.a.   ................................
     M2 G a.a.   VLRVGIYLCIKLKHTKKRQIYTDIEMNRLGK
     M3 G a.a.   VLRVGIYLCIKLKHTKKRQIYTDIEMNRLGK
     M4 G a.a.   VLRVGIYLCIKLKHTKKRQIYTDIEMNRLGK
```

FIGURE 21-2

```
                    1                                                   60
GenBank L nucl.     ATGGAAGTCCACGATTTTGAGACCGACGAGTTCAATGATTTCAATGAAGATGACTATGCC
HR L nucl.          ............................................................
M2 L nucl.          ATGGAAGTCCACGATTTTGAGACCGACGAGTTCAATGATTTCAATGAAGATGACTATGCC
M4 L nucl.          ATGGAAGTCCACGATTTTGAGACCGACGAGTTCAATGATTTCAATGAAGATGACTATGCC

                    61                                                  120
GenBank L nucl.     ACAAGAGAATTCCTGAATCCCGATGAGCGCATGACGTACTTGAATCATGCTGATTACAAT
HR L nucl.          ............................................................
M2 L nucl.          ACAAGAGAATTCCTGAATCCCGATGAGCGCATGACGTACTTGAATCATGCTGATTACAAT
M4 L nucl.          ACAAGAGAATTCCTGAATCCCGATGAGCGCATGACGTACTTGAATCATGCTGATTACAAT

                    121                                                 180
GenBank L nucl.     TTGAATTCTCCTCTAATTAGTGATGATATTGACAATTTGATCAGGAAATTCAATTCTCTT
HR L nucl.          ............................................................
M2 L nucl.          TTGAATTCTCCTCTAATTAGTGATGATATTGACAATTTGATCAGGAAATTCAATTCTCTT
M4 L nucl.          TTGAATTCTCCTCTAATTAGTGATGATATTGACAATTTGATCAGGAAATTCAATTCTCTT

                    181                                                 240
GenBank L nucl.     CCGATTCCCTCGATGTGGGATAGTAAGAACTGGGATGGAGTTCTTGAGATGTTAACATCA
HR L nucl.          ............................................................
M2 L nucl.          CCGATTCCCTCGATGTGGGATAGTAAGAACTGGGATGGAGTTCTTGAGATGTTAACATCA
M4 L nucl.          CCGATTCCCTCGATGTGGGATAGTAAGAACTGGGATGGAGTTCTTGAGATGTTAACATCA

                    241                                                 300
GenBank L nucl.     TGTCAAGCCAATCCCATCTCAACATCTCAGATGCATAAATGGATGGGAAGTTGGTTAATG
HR L nucl.          ............................................................
M2 L nucl.          TGTCAAGCCAATCCCATCTCAACATCTCAGATGCATAAATGGATGGGAAGTTGGTTAATG
M4 L nucl.          TGTCAAGCCAATCCCATCTCAACATCTCAGATGCATAAATGGATGGGAAGTTGGTTAATG

                    301                                                 360
GenBank L nucl.     TCTGATAATCATGATGCCAGTCAAGGGTATAGTTTTTTACATGAAGTGGACAAAGAGGCA
HR L nucl.          ............................................................
M2 L nucl.          TCTGATAATCATGATGCCAGTCAAGGGTATAGTTTTTTACATGAAGTG............
M4 L nucl.          TCTGATAATCATGATGCCAGTCAAGGGTATAGTTTTTTACATGAAGTGGACAAAGAGGCA

                    361                                                 420
GenBank L nucl.     GAAATAACATTTGACGTGGTGGAGACCTTCATCCGCGGCTGGGGCAACAAACCAATTGAA
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          GAAATAACATTTGACGTGGTGGAGACCTTCATCCGCGGCTGGGGCAACAAACCAATTGAA

                    421                                                 480
GenBank L nucl.     TACATCAAAAAGGAAAGATGGACTGACTCATTCAAAATTCTCGCTTATTTGTGTCAAAAG
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          TACATCAAAAAGGAAAGATGGACTGACTCATTCAAAATTCTCGCTTATTTGTGTCAAAAG

                    481                                                 540
GenBank L nucl.     TTTTTGGACTTACACAAGTTGACATTAATCTTAAATGCTGTCTCTGAGGTGGAATTGCTC
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          TTTTTGGACTTACACAAGTTGACATTAATCTTAAATGCTGTCTCTGAGGTGGAATTGCTC
```

FIGURE 22-1

```
                    541                                                 600
GenBank L nucl.     AACTTGGCGAGGACTTTCAAAGGCAAAGTCAGAAGAAGTTCTCATGGAACGAACATATGC
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          AACTTGGCGAGGACTTTCAAAGGCAAAGTCAGAAGAAGTTCTCATGGAACGAACATATGC

                    601                                                 660
GenBank L nucl.     AGGATTAGGGTTCCCAGCTTGGGTCCTACTTTTATTTCAGAAGGATGGGCTTACTTCAAG
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          AGGGTTAGGGTTCCCAGCTTGGGTCCTACTTTTATTTCAGAAGGATGGGCTTACTTCAAG

                    661                                                 720
GenBank L nucl.     AAACTTGATATTCTAATGGACCGAAACTTTCTGTTAATGGTCAAAGATGTGATTATAGGG
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          AAACTTGATATTCTAATGGACCGAAACTTTCTGTTAATGGTCAAAGATGTGATTATAGGG

                    721                                                 780
GenBank L nucl.     AGGATGCAAACGGTGCTATCCATGGTATGTAGAATAGACAACCTGTTCTCAGAGCAAGAC
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          AGGATGCAAACGGTGCTATCCATGGTATGTAGAATAGACAACCTGTTCTCAGAGCAAGAC

                    781                                                 840
GenBank L nucl.     ATCTTCTCCCTTCTAAATATCTACAGAATTGGAGATAAAATTGTGGAGAGGCAGGGAAAT
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          ATCTTCTCCCTTCTAAATATCTACAGAATTGGAGATAAAATTGTGGAGAGGCAGGGAAAT

                    841                                                 900
GenBank L nucl.     TTTTCTTATGACTTGATTAAAATGGTGGAACCGATATGCAACTTGAAGCTGATGAAATTA
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          TTTTCTTATGACTTGATTAAAATGGTGGAACCGATATGCAACTTGAGGCTGATGAAATTA

                    901                                                 960
GenBank L nucl.     GCAAGAGAATCAAGGCCTTTAGTCCCACAATTCCCTCATTTTGAAAATCATATCAAGACT
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          GCAAGAGAATCAAGGCCTTTAGTCCCACAATTCCCTCATTTTGAAAATCATATCAAGACT

                    961                                                1020
GenBank L nucl.     TCTGTTGATGAAGGGGCAAAAATTGACCGAGGTATAAGATTCCTCCATGATCAGATAATG
HR L nucl.          ............................................................
M2 L nucl.          ............................................................
M4 L nucl.          TCTGTTGATGAAGGGGCAAAAATTGACCGAGGTATAAGATTCCTCCATGATCAGATAATG
```

FIGURE 22-2

```
                1021                                                1080
GenBank L nucl. AGTGTGAAAACAGTGGATCTCACACTGGTGATTTATGGATCGTTCAGACATTGGGGTCAT
HR L nucl.      ..............................................CATTGGGGTCAT
M2 L nucl.      ............................................................
M4 L nucl.      AGTGTGAAAACAGTGGATCTCACACTGGTGATTTATGGATCGTTCAGACATTGGGGTCAT

                1081                                                1140
GenBank L nucl. CCTTTTATAGATTATTACACTGGACTAGAAAAATTACATTCCCAAGTAACCATGAAGAAA
HR L nucl.      CCTTTTATAGATTATTACGCTGGWCTAGAAAAATTACATTCCCAAGTWACCATRAAGAAA
M2 L nucl.      ............................................................
M4 L nucl.      CCTTTTATAGATTATTACGCTGGACTAGAAAAATTACATTCCCAAGTAACCATGAAGAAA

                1141                                                1200
GenBank L nucl. GATATTGATGTGTCATATGCAAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT
HR L nucl.      GATATTGATGTGTCATATGCRAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT
M2 L nucl.      ............................................................
M4 L nucl.      GATATTGATGTGTCATATGCAAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT

                1201                                                1260
GenBank L nucl. CAACAGTTCAATGATCATAAAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT
HR L nucl.      CAACAGTTCAATGATCATAMAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT
M2 L nucl.      ............................................................
M4 L nucl.      CAACAGTTCAATGATCATAAAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT

                1261                                                1320
GenBank L nucl. CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCCACAGCTGCTCAAGTTCAAGATTTT
HR L nucl.      CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCCACAGCTGCTCAAGTTCAAGATTTT
M2 L nucl.      ............................................................
M4 L nucl.      CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCCACAGCTGCTCAAGTTCAAGATTTT

                1321                                                1380
GenBank L nucl. GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC
HR L nucl.      GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC
M2 L nucl.      ............................................................
M4 L nucl.      GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC

                1381                                                1440
GenBank L nucl. CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT
HR L nucl.      CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT
M2 L nucl.      ............................................................
M4 L nucl.      CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT

                1441                                                1500
GenBank L nucl. GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC
HR L nucl.      GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC
M2 L nucl.      ............................................................
M4 L nucl.      GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC
```

FIGURE 22-3

```
                    1501                                                1560
GenBank L nucl.     ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT
HR L nucl.          ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT
M2 L nucl.          ............................................................
M4 L nucl.          ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT

                    1561                                                1620
GenBank L nucl.     GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAACTGAAGTTGGCAGGTAGATTT
HR L nucl.          GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAACTGAAGTTGGCAGGTAGATTT
M2 L nucl.          ............................................................
M4 L nucl.          GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAACTGAAGTTGGCAGGTAGATTT

                    1621                                                1680
GenBank L nucl.     TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG
HR L nucl.          TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG
M2 L nucl.          ............................................................
M4 L nucl.          TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG

                    1681                                                1740
GenBank L nucl.     ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT
HR L nucl.          ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT
M2 L nucl.          ............................................................
M4 L nucl.          ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT

                    1741                                                1800
GenBank L nucl.     AAAAAGATGTTAGATTCCTCATCCGGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA
HR L nucl.          AAAAAGATGTTAGATTCCTCATCCGGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA
M2 L nucl.          ............................................................
M4 L nucl.          AAAAAGATGTTAGATTCCTCATCCGGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA

                    1801                                                1860
GenBank L nucl.     GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA
HR L nucl.          GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA
M2 L nucl.          ............................................................
M4 L nucl.          GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA

                    1861                                                1920
GenBank L nucl.     GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA
HR L nucl.          GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA
M2 L nucl.          ............................................................
M4 L nucl.          GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA

                    1921                                                1980
GenBank L nucl.     TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTCACAAC
HR L nucl.          TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTCACAAC
M2 L nucl.          ............................................................
M4 L nucl.          TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTCACAAC

                    1981                                                2040
GenBank L nucl.     AACACACTGATCAATTCAACCTCCCAACGAGTTTGTTGGCAAGGACAAGAGGGTGGACTG
HR L nucl.          AACACACTGATCAATTCAACCTCCCAACGAGTTTGTTGGCAAGGACAAGAGGGTGGACTG
M2 L nucl.          ............................................................
M4 L nucl.          AACACACTGATCAATTCAACCTCCCAACGAGTTTGTTGGCAAGGACAAGAGGGTGGACTG
```

FIGURE 22-4

```
                    2041                                                2100
GenBank L nucl.     GAAGGTCTACGGCAAAAAGGATGGAGTATCCTCAATCTACTGGTTATTCAAAGAGAGGCT
HR L nucl.          GAAGGTCTACGGCAAAAAGGATGGAGTATCCTCAATCTACTGGTTATTCAAAGAGAGGCT
M2 L nucl.          ............................................................
M4 L nucl.          GAAGGTCTACGGCAAAAAGGATGGAGTATCCTCAATCTACTGGTTATTCAAAGAGAGGCT

                    2101                                                2160
GenBank L nucl.     AAAATCAGAAACACTGCTGTCAAAGTCTTGGCACAAGGTGATAATCAAGTTATTTGCACA
HR L nucl.          AAAATCAGAAACACTGCTGTCAAAGTCTTGGCACAAGGTGATAATCAAGTTATTTGCACA
M2 L nucl.          ............................................................
M4 L nucl.          AAAATCAGAAACACTGCTGTCAAAGTCTTGGCACAAGGTGATAATCAAGTTATTTGCACA

                    2161                                                2220
GenBank L nucl.     CAGTATAAAACGAAGAAATCGAGAAACGTTGTAGAATTACAGGGTGCTCTCAATCAAATG
HR L nucl.          CAGTATAAAACGAAGAAATCGAGAAACGTTGTAGAATTACAGGGTGCTCTCAATCAAATG
M2 L nucl.          ............................................................
M4 L nucl.          CAGTATAAAACGAAGAAATCGAGAAACGTTGTAGAATTACAGGGTGCTCTCAATCAAATG

                    2221                                                2280
GenBank L nucl.     GTTTCTAATAATGAGAAAATTATGACTGCAATCAAAATAGGGACAGGGAAGTTAGGACTT
HR L nucl.          GTTTCTAATAATGAGAAAATTATGACTGCAATCAAAATAGGGACAGGGAAGTTAGGACTT
M2 L nucl.          ............................................................
M4 L nucl.          GTTTCTAATAATGAGAAAATTATGACTGCAATCAAAATAGGGACAGGGAAGTTAGGACTT

                    2281                                                2340
GenBank L nucl.     TTGATAAATGACGATGAGACTATGCAATCTGCAGATTACTTGAATTATGGAAAAATACCG
HR L nucl.          TTGATAAATGACGATGAGACTATGCAATCTGCAGATTACTTGAATTATGGAAAAATACCG
M2 L nucl.          ............................................................
M4 L nucl.          TTGATAAATGACGATGAGACTATGCAATCTGCAGATTACTTGAATTATGGAAAAATACCA

                    2341                                                2400
GenBank L nucl.     ATTTTCCGTGGAGTGATTAGAGGGTTAGAGACCAAGAGATGGTCACGAGTGACTTGTGTC
HR L nucl.          ATTTTCCGTGGAGTGATTAGAGGGTTAGAGACCAAGAGATGGTCACGAGTGACTTGTGTC
M2 L nucl.          ............................................................
M4 L nucl.          ATTTTCCGTGGAGTGATTAGAGGGTTAGAGACCAAGAGATGGTCACGAGTGACTTGTGTC

                    2401                                                2460
GenBank L nucl.     ACCAATGACCAAATACCCACTTGTGCTAATATAATGAGCTCAGTTTCCACAAATGCTCTC
HR L nucl.          ACCAATGACCAAATACCCACTTGTGCTAATATAATGAGCTCAGTTTCCACAAATGCTCTC
M2 L nucl.          ............................................................
M4 L nucl.          ACCAATGACCAAATACCCACTTGTGCTAATATAATGAGCTCAGTTTCCACAAATGCTCTC

                    2461                                                2520
GenBank L nucl.     ACCGTAGCTCATTTTGCTGAGAACCCAATCAATGCCATGATACAGTACAATTATTTTGGG
HR L nucl.          ACCGTAGCTCATTTTGCTGAGAACCCAATCAATGCCATGATACAGTACAATTATTTTGGG
M2 L nucl.          ............................................................
M4 L nucl.          ACCGTAGCTCATTTTGCTGAGAACCCAATCAATGCCATGATACAGTACAATTATTTTGGG

                    2521                                                2580
GenBank L nucl.     ACATTTGCTAGACTCTTGTTGATGATGCATGATCCTGCTCTTCGTCAATCATTGTATGAA
HR L nucl.          ACATTTGCTAGACTCTTGTTGATGATGCATGATCCTGCTCTTCGTCAATCATTGTATGAA
M2 L nucl.          ............................................................
M4 L nucl.          ACATTTGCTAGACTCTTGTTGATGATGCATGATCCTGCTCTTCGTCAATCATTGTATGAA
```

FIGURE 22-5

```
                    2581                                                2640
GenBank L nucl.     GTTCAAGATAAGATACCGGGCTTGCACAGTTCTACTTTCAAATACGCCATGTTGTATTTG
HR L nucl.          GTTCAAGATAAGATACCGGGCTTGCACAGTTCTACTTTCAAATACGCCATGTTGTATTTG
M2 L nucl.          ............................................................
M4 L nucl.          GTTCAAGATAAGATACCGGGCTTGCACAGTTCTACTTTCAAATACGCCATGTTGTATTTG

                    2641                                                2700
GenBank L nucl.     GACCCTTCCATTGGAGGAGTGTCGGGCATGTCTTTGTCCAGGTTTTTGATTAGAGCCTTC
HR L nucl.          GACCCTTCCATTGGAGGAGTGTCGGGCATGTCTTTGTCCAGGTTTTTGATTAGAGCCTTC
M2 L nucl.          ............................................................
M4 L nucl.          GACCCTTCCATTGGAGGAGTGTCGGGCATGTCTTTGTCCAGGTTTTTGATTAGAGCCTTC

                    2701                                                2760
GenBank L nucl.     CCAGATCCCGTAACAGAAAGTCTCTCATTCTGGAGATTCATCCATGTACATGCTCGAAGT
HR L nucl.          CCAGATCCCGTAACAGAAAGTCTCTCATTCTGGAGATTCATCCATGTACATGCTCGAAGT
M2 L nucl.          ............................................................
M4 L nucl.          CCAGATCCCGTAACAGAAAGTCTCTCATTCTGGAGATTCATCCATGTACATGCTCGAAGT

                    2761                                                2820
GenBank L nucl.     GAGCATCTGAAGGAGATGAGTGCAGTATTTGGAAACCCCGAGATAGCCAAGTTTCGAATA
HR L nucl.          GAGCATCTGAAGGAGATGAGTGCAGTATTTGGAAACCCCGAGATAGCCAAGTTTCGAATA
M2 L nucl.          ............................................................
M4 L nucl.          GAGCATCTGAAGGAGATGAGTGCAGTATTTGGAAACCCCGAGATAGCCAAGTTTCGAATA

                    2821                                                2880
GenBank L nucl.     ACTCACATAGACAAGCTAGTAGAAGATCCAACCTCTCTGAACATCGCTATGGGAATGAGT
HR L nucl.          ACTCACATAGACAAGCTAGTAGAAGATCCAACCTCTCTGAACATCGCTATGGGAATGAGT
M2 L nucl.          ............................................................
M4 L nucl.          ACTCACATAGACAAGCTAGTAGAAGATCCAACCTCTCTGAACATCGCTATGGGAATGAGT

                    2881                                                2940
GenBank L nucl.     CCAGCGAACTTGTTAAAGACTGAGGTTAAAAAATGCTTAATCGAATCAAGACAAACCATC
HR L nucl.          CCAGCGAACTTGTTAAAGACTGAGGTTAAAAAATGCTTAATCGAATCAAGACAAACCATC
M2 L nucl.          ............................................................
M4 L nucl.          CCAGCGAACTTGTTAAAGACTGAGGTTAAAAAATGCTTAATCGAATCAAGACAAACCATC

                    2941                                                3000
GenBank L nucl.     AGGAACCAGGTGATTAAGGATGCAACCATATATTTGTATCATGAAGAGGATCGGCTCAGA
HR L nucl.          AGGAACCAGGTGATTAAGGATGCAACCATATATTTGTATCATGAAGAGGATCGGCTCAGA
M2 L nucl.          ............................................................
M4 L nucl.          AGGAACCAGGTGATTAAGGATGCAACCATATATTTGTATCATGAAGAGGATCGGCTCAGA

                    3001                                                3060
GenBank L nucl.     AGTTTCTTATGGTCAATAAATCCTCTGTTCCCTAGATTTTTAAGTGAATTCAAATCAGGC
HR L nucl.          AGTTTCTTATGGTCAATAAATCCTCTGTTCCCTAGATTTTTAAGTGAATTCAAATCAGGC
M2 L nucl.          ............................................................
M4 L nucl.          AGTTTCTTATGGTCAATAAATCCTCTGTTCCCTAGATTTTTAAGTGAATTCAAATCAGGC

                    3061                                                3120
GenBank L nucl.     ACTTTTTTGGGAGTCGCAGACGGGCTCATCAGTCTATTTCAAAATTCTCGTACTATTCGG
HR L nucl.          ACTTTTTTGGGAGTCGCAGACGGGCTCATCAGTCTATTTCAAAATTCTCGTACTATTCGG
M2 L nucl.          ............................................................
M4 L nucl.          ACTTTTTTGGGAGTCGCAGACGGGCTCATCAGTCTATTTCAAAATTCTCGTACTATTCGG
```

FIGURE 22-6

```
                    3121                                                3180
GenBank L nucl.     AACTCCTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA
HR L nucl.          AACTCCTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA
M2 L nucl.          ............................................................
M4 L nucl.          AACTCCTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA

                    3181                                                3240
GenBank L nucl.     TCCTCTTTGACACATTTAGGGAAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA
HR L nucl.          TCCTCTTTGACACATTTAGGGAAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA
M2 L nucl.          ............................................................
M4 L nucl.          TCCTCTTTGACACATTTAGGGAAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA

                    3241                                                3300
GenBank L nucl.     TGTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG
HR L nucl.          TGTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG
M2 L nucl.          ............................................................
M4 L nucl.          TGTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG

                    3301                                                3360
GenBank L nucl.     ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT
HR L nucl.          ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT
M2 L nucl.          ............................................................
M4 L nucl.          ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT

                    3361                                                3420
GenBank L nucl.     GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT
HR L nucl.          GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT
M2 L nucl.          ............................................................
M4 L nucl.          GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT

                    3421                                                3480
GenBank L nucl.     GACGTCTTTAGTTCACGGGGACCATTGCCTGCTTATCTAGGGTCTAAAACATCTGAATCT
HR L nucl.          GACGTCTTTAGTTCACGGGGACCATTGCCTGCTTATCTAGGGTCTAAAACATCTGAATCT
M2 L nucl.          ............................................................
M4 L nucl.          GACGTCTTTAGTTCACGGGGACCATTGCCTGCTTATCTAGGGTCTAAAACATCTGAATCT

                    3481                                                3540
GenBank L nucl.     ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA
HR L nucl.          ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA
M2 L nucl.          ............................................................
M4 L nucl.          ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA

                    3541                                                3600
GenBank L nucl.     CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAAACTAGCAATGACTATA
HR L nucl.          CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAAACTAGCAATGACTATA
M2 L nucl.          ............................................................
M4 L nucl.          CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAAACTAGCAATGACTATA

                    3601                                                3660
GenBank L nucl.     CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAAGGCAGCATGGGTTCAAA
HR L nucl.          CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAAGGCAGCATGGGTTCAAA
M2 L nucl.          ............................................................
M4 L nucl.          CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAAGGCAGCATGGGTTCAAA
```

FIGURE 22-7

```
                    3661                                                3720
GenBank L nucl.     AGAACAGGGTCTGCCCTTCATAGGTTTTCGACATCTCGGATGAGCCATGGTGGGTTCGCA
HR L nucl.          AGAACAGGGTCTGCCCTTCATAGGTTTTCGACATCTCGGATGAGCCATGGTGGGTTCGCA
M2 L nucl.          ............................................................
M4 L nucl.          AGAACAGGGTCTGCCCTTCATAGGTTTTCGACATCTCGGATGAGCCATGGTGGGTTCGCA

                    3721                                                3780
GenBank L nucl.     TCTCAGAGCACTGCAGCATTGACCAGGTTGATGGCAACTACAGACACCATGAGGGATCTG
HR L nucl.          TCTCAGAGCACTGCAGCATTGACCAGGTTGATGGCAACTACAGACACCATGAGGGATCTG
M2 L nucl.          ............................................................
M4 L nucl.          TCTCAGAGCACTGCAGCATTGACCAGGTTGATGGCAACTACAGACACCATGAGGGATCTG

                    3781                                                3840
GenBank L nucl.     GGAGATCAGAATTTCGACTTTTTATTCCAAGCAACGTTGCTCTATGCTCAAATTACCACC
HR L nucl.          GGAGATCAGAATTTCGACTTTTTATTCCAGGCAACGTTGCTCTATGCTCAGATTACCACC
M2 L nucl.          ............................................................
M4 L nucl.          GGAGATCAGAATTTCGACTTTTTATTCCANGCAACGTTGCTCTATGCTCANATTACCACC

                    3841                                                3900
GenBank L nucl.     ACTGTTGCAAGAGACGGATGGATCACCAGTTGTACAGATCATTATCATATTGCCTGTAAG
HR L nucl.          ACTGTTGCAAGAGACGGATGGATCACCAGTTGTACAGATCATTATCATATTGCCTGTAAG
M2 L nucl.          ............................................................
M4 L nucl.          ACTGTTGCAAGAGACGGATGGATCACCAGTTGTACAGATCATTATCATATTGCCTGTAAG

                    3901                                                3960
GenBank L nucl.     TCCTGTTTGAGACCCATAGAAGAGATCACCCTGGACTCAAGTATGGACTACACGCCCCCA
HR L nucl.          TCCTGTTTGAGACCCATAGAAGAGATCACCCTGGACTCAAGTATGGACTACACGCCCCCA
M2 L nucl.          ............................................................
M4 L nucl.          TCCTGTTTGAGACCCATAGAAGAGATCACCCTGGACTCAAGTATGGACTACACGCCCCCA

                    3961                                                4020
GenBank L nucl.     GATGTATCCCATGTGCTGAAGACATGGAGGAATGGGGAAGGTTCGTGGGGACAAGAGATA
HR L nucl.          GATGTATCCCATGTGCTGAAGACATGGAGGAATGGGGAAGGTTCGTGGGGACAAGAGATA
M2 L nucl.          ............................................................
M4 L nucl.          GATGTATCCCATGTGCTGAAGACATGGAGGAATGGGGAAGGTTCGTGGGGACAAGAGATA

                    4021                                                4080
GenBank L nucl.     AAACAGATCTATCCTTTAGAAGGGAATTGGAAGAATTTAGCACCTGCTGAGCAATCCTAT
HR L nucl.          AAACAGATCTATCCTTTAGAAGGGAATTGGAAGAATTTAGCACCTGCTGAGCAATCCTAT
M2 L nucl.          ............................................................
M4 L nucl.          AAACAGATCTATCCTTTAGAAGGGAATTGGAAGAATTTAGCACCTGCTGAGCAATCCTAT

                    4081                                                4140
GenBank L nucl.     CAAGTCGGCAGATGTATAGGTTTTCTATATGGAGACTTGGCGTATAGAAAATCTACTCAT
HR L nucl.          CAAGTCGGCAGATGTATAGGTTTTCTATATGGAGACTTGGCGTATAGAAAATCTACTCAT
M2 L nucl.          ............................................................
M4 L nucl.          CAAGTCGGCAGATGTATAGGTTTTCTATATGGAGACTTGGCGTATAGAAAATCTACTCAT

                    4141                                                4200
GenBank L nucl.     GCCGAGGACAGTTCTCTATTTCCTCTATCTATACAAGGTCGTATTAGAGGTCGAGGTTTC
HR L nucl.          GCCGAGGACAGTTCTCTATTTCCTCTATCTATACAAGGTCGTATTAGAGGTCGAGGTTTC
M2 L nucl.          ............................................................
M4 L nucl.          GCCGAGGACAGTTCTCTATTTCCTCTATCTATACAAGGTCGTATTAGAGGTCGAGGTTTC
```

FIGURE 22-8

```
                    4201                                                4260
GenBank L nucl.     TTAAAAGGGTTGCTAGACGGATTAATGAGAGCAAGTTGCTGCCAAGTAATACACCGGAGA
HR L nucl.          TTAAAAGGGTTGCTAGACGGATTAATGAGAGCAAGTTGCTGCCAAGTAATACACCGGAGA
M2 L nucl.          ............................................................
M4 L nucl.          TTAAAAGGGTTGCTAGACGGATTAATGAGAGCAAGTTGCTGCCAAGTAATACACCGGAGA

                    4261                                                4320
GenBank L nucl.     AGTCTGGCTCATTTGAAGAGGCCGGCCAACGCAGTGTACGGAGGTTTGATTTACTTGATT
HR L nucl.          AGTCTGGCTCATTTGAAGAGGCCGGCCAACGCAGTGTACGGAGGTTTGATTTACTTGATT
M2 L nucl.          ............................................................
M4 L nucl.          AGTCTGGCTCATTTGAAGAGGCCGGCCAACGCAGTGTACGGAGGTTTGATTTACTTGATT

                    4321                                                4380
GenBank L nucl.     GATAAATTGAGTGTATCACCTCCATTCCTTTCTCTTACTAGATCAGGACCTATTAGAGAC
HR L nucl.          GATAAATTGAGTGTATCACCTCCATTCCTTTCTCTTACTAGATCAGGACCTATTAGAGAC
M2 L nucl.          ............................................................
M4 L nucl.          GATAAATTGAGTGTATCACCTCCATTCCTTTCTCTTACTAGATCAGGACCTATTAGAGAC

                    4381                                                4440
GenBank L nucl.     GAATTAGAAACGATTCCCCACAAGATCCCAACCTCCTATCCGACAAGCAACCGTGATATG
HR L nucl.          GAATTAGAAACGATTCCCCACAAGATCCCAACCTCCTATCCGACAAGCAACCGTGATATG
M2 L nucl.          ............................................................
M4 L nucl.          GAATTAGAAACGATTCCCCACAAGATCCCAACCTCCTATCCGACAAGCAACCGTGATATG

                    4441                                                4500
GenBank L nucl.     GGGGTGATTGTCAGAAATTACTTCAAATACCAATGCCGTCTAATTGAAAAGGGAAAATAC
HR L nucl.          GGGGTGATTGTCAGAAATTACTTCAAATACCAATGCCGTCTAATTGAAAAGGGAAAATAC
M2 L nucl.          ............................................................
M4 L nucl.          GGGGTGATTGTCAGAAATTACTTCAAATACCAATGCCGTCTAATTGAAAAGGGAAAATAC

                    4501                                                4560
GenBank L nucl.     AGATCACATTATTCACAATTATGGTTATTCTCAGATGTCTTATCCATAGACTTCATTGGA
HR L nucl.          AGATCACATTATTCACAATTATGGTTATTCTCAGATGTCTTATCCATAGACTTCATTGGA
M2 L nucl.          ............................................................
M4 L nucl.          AGATCACATTATTCACAATTATGGTTATTCTCAGATGTCTTATCCATAGACTTCATTGGA

                    4561                                                4620
GenBank L nucl.     CCATTCTCTATTTCCACCACCCTCTTGCAAATCCTATACAAGCCATTTTTATCTGGGAAA
HR L nucl.          CCATTCTCTATTTCCACCACCCTCTTGCAAATCCTATACAAGCCATTTTTATCTGGGAAA
M2 L nucl.          ............................................................
M4 L nucl.          CCATTCTCTATTTCCACCACCCTCTTGCAAATCCTATACAAGCCATTTTTATCTGGGAAA

                    4621                                                4680
GenBank L nucl.     GATAAGAATGAGTTGAGAGAGCTGGCAAATCTTTCTTCATTGCTAAGATCAGGAGAGGGG
HR L nucl.          GATAAGAATGAGTTGAGAGAGCTGGCAAATCTTTCTTCATTGCTAAGATCAGGAGAGGGG
M2 L nucl.          ............................................................
M4 L nucl.          GATAAGAATGAGTTGAGAGAGCTGGCAAATCTTTCTTCATTGCTAAGATCAGGAGAGGGG

                    4681                                                4740
GenBank L nucl.     TGGGAAGACATACATGTGAAATTCTTCACCAAGGACATATTATTGTGTCCAGAGGAAATC
HR L nucl.          TGGGAAGACATACATGTGAAATTCTTCACCAAGGACATATTATTGTGTCCAGAGGAAATC
M2 L nucl.          ............................................................
M4 L nucl.          TGGGAAGACATACATGTGAAATTCTTCACCAAGGACATATTATTGTGTCCAGAGGAAATC
```

FIGURE 22-9

```
                    4741                                                4800
GenBank L nucl.     AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT
HR L nucl.          AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT
M2 L nucl.          ............................................................
M4 L nucl.          AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT

                    4801                                                4860
GenBank L nucl.     TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT
HR L nucl.          TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT
M2 L nucl.          ............................................................
M4 L nucl.          TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT

                    4861                                                4920
GenBank L nucl.     TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG
HR L nucl.          TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG
M2 L nucl.          ............................................................
M4 L nucl.          TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG

                    4921                                                4980
GenBank L nucl.     TTGGGCCAGTTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA
HR L nucl.          TTGGGCCAGTTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA
M2 L nucl.          ............................................................
M4 L nucl.          TTGGGCCAGTTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA

                    4981                                                5040
GenBank L nucl.     ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA
HR L nucl.          ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA
M2 L nucl.          ............................................................
M4 L nucl.          ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA

                    5041                                                5100
GenBank L nucl.     CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA
HR L nucl.          CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA
M2 L nucl.          ............................................................
M4 L nucl.          CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA

                    5101                                                5160
GenBank L nucl.     GTCATGCGAGGCGCCTCTCCTGAGCCCCCCAGTGCCCTAGAAACTTTAGGAGGAGATAAA
HR L nucl.          GTCATGCGAGGCGCCTCTCCTGAGCCCCCCAGTGCCCTAGAAACTTTAGGAGGAGATAAA
M2 L nucl.          ............................................................
M4 L nucl.          GTCATGCGAGGCGCCTCTCCTGAGCCCCCCAGTGCCCTAGAAACTTTAGGAGGAGATAAA

                    5161                                                5220
GenBank L nucl.     TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG
HR L nucl.          TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG
M2 L nucl.          ............................................................
M4 L nucl.          TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG

                    5221                                                5280
GenBank L nucl.     ACTTGGGACTATTTCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA
HR L nucl.          ACTTGGGACTATTTCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA
M2 L nucl.          ............................................................
M4 L nucl.          ACTTGGGACTATTTCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA
```

FIGURE 22-10

```
                    5281                                                5340
GenBank L nucl.     ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT
HR L nucl.          ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT
M2 L nucl.          ............................................................
M4 L nucl.          ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT

                    5341                                                5400
GenBank L nucl.     TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTTAATCTACAAGACTTATGGAACATAT
HR L nucl.          TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTTAATCTACAAGACTTATGGAACATAT
M2 L nucl.          ............................................................
M4 L nucl.          TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTTAATCTACAAGACTTATGGAACATAT

                    5401                                                5460
GenBank L nucl.     ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC
HR L nucl.          ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC
M2 L nucl.          ............................................................
M4 L nucl.          ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC

                    5461                                                5520
GenBank L nucl.     TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGTCTGAAGTATATATGGTATGTAAAGGT
HR L nucl.          TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGTCTGAAGTATATATGGTATGTAAAGGT
M2 L nucl.          ............................................................
M4 L nucl.          TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGTCTGAAGTATATATGGTATGTAAAGGT

                    5521                                                5580
GenBank L nucl.     TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA
HR L nucl.          TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA
M2 L nucl.          ............................................................
M4 L nucl.          TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA

                    5581                                                5640
GenBank L nucl.     AACCTGTACGCATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA
HR L nucl.          AACCTGTACGCATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA
M2 L nucl.          ............................................................
M4 L nucl.          AACCTGTACGCATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA

                    5641                                                5700
GenBank L nucl.     TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCCTGATCCTTTTGTGAACATTGAG
HR L nucl.          TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCCTGATCCTTTTGTGAACATTGAG
M2 L nucl.          ............................................................
M4 L nucl.          TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCCTGATCCTTTTGTGAACATTGAG

                    5701                                                5760
GenBank L nucl.     ACTATGCTACAAATATTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAAATCA
HR L nucl.          ACTATGCTACAAATATTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAAATCA
M2 L nucl.          ............................................................
M4 L nucl.          ACTATGCTACAAATATTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAAATCA

                    5761                                                5820
GenBank L nucl.     TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT
HR L nucl.          TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT
M2 L nucl.          ............................................................
M4 L nucl.          TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT
```

FIGURE 22-11

```
                    5821                                                5880
GenBank L nucl.     TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT
HR L nucl.          TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT
M2 L nucl.          ............................................................
M4 L nucl.          TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT

                    5881                                                5940
GenBank L nucl.     GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA
HR L nucl.          GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA
M2 L nucl.          ............................................................
M4 L nucl.          GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA

                    5941                                                6000
GenBank L nucl.     GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCCGATTAGGTGG
HR L nucl.          GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCCGATTAGGTGG
M2 L nucl.          ............................................................
M4 L nucl.          GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCCGATTAGGTGG

                    6001                                                6060
GenBank L nucl.     GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC
HR L nucl.          GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC
M2 L nucl.          ............................................................
M4 L nucl.          GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC

                    6061                                                6120
GenBank L nucl.     CCAAAAGATACCCGAAGTTCAGACTCCTTGGCCCCAATCGGGAACTGGATCAGATCTCTG
HR L nucl.          CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACTGGATCAGATCTCTG
M2 L nucl.          ............................................................
M4 L nucl.          CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACTGGATCAGATCTCTG

                    6121                                                6180
GenBank L nucl.     GAATTGGTCCGAAACCAAGTTCGTCTAAATCCATTCAATGAGATCTTGTTCAATCAGCTA
HR L nucl.          GAATTGGTCCGAAACCAAGTTCGTCTAAATCCATTCAATGAGATCTTGTTCAATCAGCTA
M2 L nucl.          ............................................................
M4 L nucl.          GAATTGGTCCGAAACCAAGTTCGTCTAAATCCATTCAATGAGATCTTGTTCAATCAGCTA

                    6181                                                6240
GenBank L nucl.     TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAGAAACACAGGAATGATT
HR L nucl.          TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAAAAACACAGGAATGATT
M2 L nucl.          ............................................................
M4 L nucl.          TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAAAAACACAGGAATGATT

                    6241                                                6300
GenBank L nucl.     GAATGGATCAATAGACGAATTTCAAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC
HR L nucl.          GAATGGATCAATAGACGAATTTCAAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC
M2 L nucl.          ............................................................
M4 L nucl.          GAATGGATCAATAGACGAATTTCAAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC
```

FIGURE 22-12

```
                    6301                                                6360
GenBank L nucl.     CTACACGAGGAAAACTCTTGGAGAGATTAA.............................
HR L nucl.          CTACATGAGGAAAACTCTTGGAGAGATTAAAAAAATCATGAGGAGACTCCAAACTTTAAGT
M2 L nucl.          ..............................................................
M4 L nucl.          CTACATGAGGAAAACTCTTGGAGAGATTAA.............................

                    6361                          6395
GenBank L nucl.     ..................................
HR L nucl.          ATGAAAAAAACTTTGATCCTTAAGACCCTCTTGTG
M2 L nucl.          ..................................
M4 L nucl.          ..................................
```

FIGURE 22-13

```
                    1                                                   60
GenBank L  a.a.     MEVHDFETDEFNDFNEDDYATREFLNPDERMTYLNHADYNLNSPLISDDIDNLIRKFNSL
HR L a.a.           ............................................................
M4 L a.a.           MEVHDFETDEFNDFNEDDYATREFLNPDERMTYLNHADYNLNSPLISDDIDNLIRKFNSL

                    61                                                  120
GenBank L  a.a.     PIPSMWDSKNWDGVLEMLTSCQANPISTSQMHKWMGSWLMSDNHDASQGYSFLHEVDKEA
HR L a.a.           ............................................................
M4 L a.a.           PIPSMWDSKNWDGVLEMLTSCQANPISTSQMHKWMGSWLMSDNHDASQGYSFLHEVDKEA

                    121                                                 180
GenBank L  a.a.     EITFDVVETFIRGWGNKPIEYIKKERWTDSFKILAYLCQKFLDLHKLTLILNAVSEVELL
HR L a.a.           ............................................................
M4 L a.a.           EITFDVVETFIRGWGNKPIEYIKKERWTDSFKILAYLCQKFLDLHKLTLILNAVSEVELL

                    181                                                 240
GenBank L  a.a.     NLARTFKGKVRRSSHGTNICRXRVPSLGPTFISEGWAYFKKLDILMDRNFLLMVKDVIIG
HR L a.a.           ............................................................
M4 L a.a.           NLARTFKGKVRRSSHGTNICRXRVPSLGPTFISEGWAYFKKLDILMDRNFLLMVKDVIIG

                    241                                                 300
GenBank L  a.a.     RMQTVLSMVCRIDNLFSEQDIFSLLNIYRIGDKIVERQGNFSYDLIKMVEPICNLXLMKL
HR L a.a.           ............................................................
M4 L a.a.           RMQTVLSMVCRIDNLFSEQDIFSLLNIYRIGDKIVERQGNFSYDLIKMVEPICNLXLMKL

                    301                                                 360
GenBank L  a.a.     ARESRPLVPQFPHFENHIKTSVDEGAKIDRGIRFLHDQIMSVKTVDLTLVIYGSFRHWGH
HR L a.a.           ............................................................HWGH
M4 L a.a.           ARESRPLVPQFPHFENHIKTSVDEGAKIDRGIRFLHDQIMSVKTVDLTLVIYGSFRHWGH

                    361                                                 420
GenBank L  a.a.     PFIDYYXGLEKLHSQVTMKKDIDVSYAKALASDLARIVLFQQFNDHKKWFVNGDLLPHDH
HR L a.a.           PFIDYYAGLEKLHSQVTXKKDIDVSYAKALASDLARIVLFQQFNDHXKWFVNGDLLPHDH
M4_L.pro            PFIDYYAGLEKLHSQVTMKKDIDVSYAKALASDLARIVLFQQFNDHKKWFVNGDLLPHDH

                    421                                                 480
GenBank L  a.a.     PFKSHVKENTWPTAAQVQDFGDKWHELPLIKCFEIPDLLDPSIIYSDKSHSMNRSEVLKH
HR L a.a.           PFKSHVKENTWPTAAQVQDFGDKWHELPLIKCFEIPDLLDPSIIYSDKSHSMNRSEVLKH
M4 L a.a.           PFKSHVKENTWPTAAQVQDFGDKWHELPLIKCFEIPDLLDPSIIYSDKSHSMNRSEVLKH

                    481                                                 540
GenBank L  a.a.     VRMNPNTPIPSKKVLQTMLDTKATNWKEFLKEIDEKGLDDDDLIIGLKGKERELKLAGRF
HR L a.a.           VRMNPNTPIPSKKVLQTMLDTKATNWKEFLKEIDEKGLDDDDLIIGLKGKERELKLAGRF
M4 L a.a.           VRMNPNTPIPSKKVLQTMLDTKATNWKEFLKEIDEKGLDDDDLIIGLKGKERELKLAGRF

                    541                                                 600
GenBank L  a.a.     FSLMSWKLREYFVITEYLIKTHFVPMFKGLTMADDLTAVIKKMLDSSSGQGLKSYEAICI
HR L a.a.           FSLMSWKLREYFVITEYLIKTHFVPMFKGLTMADDLTAVIKKMLDSSSGQGLKSYEAICI
M4 L a.a.           FSLMSWKLREYFVITEYLIKTHFVPMFKGLTMADDLTAVIKKMLDSSSGQGLKSYEAICI
```

FIGURE 23-1

```
                    601                                                 660
GenBank L  a.a.     ANHIDYEKWNNHQRKLSNGPVFRVMGQFLGYPSLIERTHEFFEKSLIYYNGRPDLMRVHN
HR L a.a.           ANHIDYEKWNNHQRKLSNGPVFRVMGQFLGYPSLIERTHEFFEKSLIYYNGRPDLMRVHN
M4 L a.a.           ANHIDYEKWNNHQRKLSNGPVFRVMGQFLGYPSLIERTHEFFEKSLIYYNGRPDLMRVHN

                    661                                                 720
GenBank L  a.a.     NTLINSTSQRVCWQGQEGGLEGLRQKGWIILNLLVIQREAKIRNTAVKVLAQGDNQVICT
HR L a.a.           NTLINSTSQRVCWQGQEGGLEGLRQKGWSILNLLVIQREAKIRNTAVKVLAQGDNQVICT
M4 L a.a.           NTLINSTSQRVCWQGQEGGLEGLRQKGWSILNLLVIQREAKIRNTAVKVLAQGDNQVICT

                    721                                                 780
GenBank L  a.a.     QYKTKKSRNVVELQGALNQMVSNNEKIMTAIKIGTGKLGLLINDDETMQSADYLNYGKIP
HR L a.a.           QYKTKKSRNVVELQGALNQMVSNNEKIMTAIKIGTGKLGLLINDDETMQSADYLNYGKIP
M4 L a.a.           QYKTKKSRNVVELQGALNQMVSNNEKIMTAIKIGTGKLGLLINDDETMQSADYLNYGKIP

                    781                                                 840
GenBank L  a.a.     IFRGVIRGLETKRWSRVTCVTNDQIPTCANIMSSVSTNALTVAHFAENPINAMIQYNYFG
HR L a.a.           IFRGVIRGLETKRWSRVTCVTNDQIPTCANIMSSVSTNALTVAHFAENPINAMIQYNYFG
M4 L a.a.           IFRGVIRGLETKRWSRVTCVTNDQIPTCANIMSSVSTNALTVAHFAENPINAMIQYNYFG

                    841                                                 900
GenBank L  a.a.     TFARLLLMMHDPALRQSLYEVQDKIPGLHSSTFKYAMLYLDPSIGGVSGMSLSRFLIRAF
HR L a.a.           TFARLLLMMHDPALRQSLYEVQDKIPGLHSSTFKYAMLYLDPSIGGVSGMSLSRFLIRAF
M4 L a.a.           TFARLLLMMHDPALRQSLYEVQDKIPGLHSSTFKYAMLYLDPSIGGVSGMSLSRFLIRAF

                    901                                                 960
GenBank L  a.a.     PDPVTESLSFWRFIHVHARSEHLKEMSAVFGNPEIAKFRITHIDKLVEDPTSLNIAMGMS
HR L a.a.           PDPVTESLSFWRFIHVHARSEHLKEMSAVFGNPEIAKFRITHIDKLVEDPTSLNIAMGMS
M4 L a.a.           PDPVTESLSFWRFIHVHARSEHLKEMSAVFGNPEIAKFRITHIDKLVEDPTSLNIAMGMS

                    961                                                 1020
GenBank L  a.a.     PANLLKTEVKKCLIESRQTIRNQVIKDATIYLYHEEDRLRSFLWSINPLFPRFLSEFKSG
HR L a.a.           PANLLKTEVKKCLIESRQTIRNQVIKDATIYLYHEEDRLRSFLWSINPLFPRFLSEFKSG
M4 L a.a.           PANLLKTEVKKCLIESRQTIRNQVIKDATIYLYHEEDRLRSFLWSINPLFPRFLSEFKSG

                    1021                                                1080
GenBank L  a.a.     TFLGVADGLISLFQNSRTIRNSFKKKYHRELDDLIVRSEVSSLTHLGKLHLRRGSCKMWT
HR L a.a.           TFLGVADGLISLFQNSRTIRNSFKKKYHRELDDLIVRSEVSSLTHLGKLHLRRGSCKMWT
M4 L a.a.           TFLGVADGLISLFQNSRTIRNSFKKKYHRELDDLIVRSEVSSLTHLGKLHLRRGSCKMWT

                    1081                                                1140
GenBank L  a.a.     CSATHADTLRYKSWGRTVIGTTVPHPLEMLGPQHRKETPCAPCNTSGFNYVSVHCPDGIH
HR L a.a.           CSATHADTLRYKSWGRTVIGTTVPHPLEMLGPQHRKETPCAPCNTSGFNYVSVHCPDGIH
M4 L a.a.           CSATHADTLRYKSWGRTVIGTTVPHPLEMLGPQHRKETPCAPCNTSGFNYVSVHCPDGIH

                    1141                                                1200
GenBank L  a.a.     DVFSSRGPLPAYLGSKTSESTSILQPWERESKVPLIKRATRLRDAISWFVEPDSKLAMTI
HR L a.a.           DVFSSRGPLPAYLGSKTSESTSILQPWERESKVPLIKRATRLRDAISWFVEPDSKLAMTI
M4 L a.a.           DVFSSRGPLPAYLGSKTSESTSILQPWERESKVPLIKRATRLRDAISWFVEPDSKLAMTI
```

FIGURE 23-2

```
                    1201                                                1260
GenBank L  a.a.     LSNIHSLTGEEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTMRDL
HR L a.a.           LSNIHSLTGEEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTMRDL
M4 L a.a.           LSNIHSLTGEEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTMRDL

                    1261                                                1320
GenBank L  a.a.     GDQNFDFLFQATLLYAQITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP
HR L a.a.           GDQNFDFLFQATLLYAQITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP
M4 L a.a.           GDQNFDFLFXATLLYAXITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP

                    1321                                                1380
GenBank L  a.a.     DVSHVLKTWRNGEGSWGQEIKQIYPLEGNWKNLAPAEQSYQVGRCIGFLYGDLAYRKSTH
HR L a.a.           DVSHVLKTWRNGEGSWGQEIKQIYPLEGNWKNLAPAEQSYQVGRCIGFLYGDLAYRKSTH
M4 L a.a.           DVSHVLKTWRNGEGSWGQEIKQIYPLEGNWKNLAPAEQSYQVGRCIGFLYGDLAYRKSTH

                    1381                                                1440
GenBank L  a.a.     AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKRPANAVYGGLIYLI
HR L a.a.           AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKRPANAVYGGLIYLI
M4 L a.a.           AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKRPANAVYGGLIYLI

                    1441                                                1500
GenBank L  a.a.     DKLSVSPPFLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY
HR L a.a.           DKLSVSPPFLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY
M4 L a.a.           DKLSVSPPFLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY

                    1501                                                1560
GenBank L  a.a.     RSHYSQLWLFSDVLSIDFIGPFSISTTLLQILYKPFLSGKDKNELRELANLSSLLRSGEG
HR L a.a.           RSHYSQLWLFSDVLSIDFIGPFSISTTLLQILYKPFLSGKDKNELRELANLSSLLRSGEG
M4 L a.a.           RSHYSQLWLFSDVLSIDFIGPFSISTTLLQILYKPFLSGKDKNELRELANLSSLLRSGEG

                    1561                                                1620
GenBank L  a.a.     WEDIHVKFFTKDILLCPEEIRHACKFGIAKDNNKDMSYPPWGRESRGTITTIPVYYTTTP
HR L a.a.           WEDIHVKFFTKDILLCPEEIRHACKFGIAKDNNKDMSYPPWGRESRGTITTIPVYYTTTP
M4 L a.a.           WEDIHVKFFTKDILLCPEEIRHACKFGIAKDNNKDMSYPPWGRESRGTITTIPVYYTTTP

                    1621                                                1680
GenBank L  a.a.     YPKMLEMPPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL
HR L a.a.           YPKMLEMPPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL
M4 L a.a.           YPKMLEMPPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL

                    1681                                                1740
GenBank L  a.a.     LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETLGGDKSRCVNGETCWEYPSDLCDPR
HR L a.a.           LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETLGGDKSRCVNGETCWEYPSDLCDPR
M4 L a.a.           LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETLGGDKSRCVNGETCWEYPSDLCDPR

                    1741                                                1800
GenBank L  a.a.     TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY
HR L a.a.           TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY
M4 L a.a.           TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY

                    1801                                                1860
GenBank L  a.a.     ICESEKNAVTILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK
HR L a.a.           ICESEKNAVTILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK
M4 L a.a.           ICESEKNAVTILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK
```

FIGURE 23-3

```
                    1861                                                1920
GenBank L  a.a.     NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS
HR L a.a.           NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS
M4 L a.a.           NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS

                    1921                                                1980
GenBank L  a.a.     SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK
HR L a.a.           SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK
M4 L a.a.           SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK

                    1981                                                2040
GenBank L  a.a.     DIPLYQQCLAVIQQSFPIRWEAVSVKGGYKQKWSTRGDGLPKDTRTSDSLAPIGNWIRSL
HR L a.a.           DIPLYQQCLAVIQQSFPIRWEAVSVKGGYKQKWSTRGDGLPKDTRISDSLAPIGNWIRSL
M4 L a.a.           DIPLYQQCLAVIQQSFPIRWEAVSVKGGYKQKWSTRGDGLPKDTRISDSLAPIGNWIRSL

                    2041                                                2100
GenBank L  a.a.     ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRRNTGMIEWINRRISKEDRSILMLKSD
HR L a.a.           ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRKNTGMIEWINRRISKEDRSILMLKSD
M4 L a.a.           ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRKNTGMIEWINRRISKEDRSILMLKSD

                    2101    2110
GenBank L  a.a.     LHEENSWRD
HR L a.a.           LHEENSWRD
M4 L a.a.           LHEENSWRD
```

FIGURE 23-4